DRAFT ENVIRONMENTAL IMPACT REPORT

COYOTE CREEK AGRIVOLTAIC RANCH PROJECT

Control Number: PLNP2021-00191
State Clearinghouse Number: 2022010271
February 2025

COUNTY OF SACRAMENTO
COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING AND ENVIRONMENTAL REVIEW DIVISION
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 Department requires its preparation, it 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
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PLANNING AND ENVIRONMENTAL REVIEW DIVISION
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PLATES

Acronyms and Abbreviations

°C	degrees Celsius
2014 Scoping Plan Update	First Update to the Climate Change Scoping Plan: Building on the Framework
2017 Scoping Plan Update	California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target
AB	Assembly Bill
ABPP	Avian and Bat Protection Plan
AC	alternating current
ACHP	Advisory Council on Historic Preservation
ADT	average daily traffic
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
AMMs	avoidance and minimization measures
AMP	Avoidance and Minimization Plan
ANSI	American National Standards Institute
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
APN	Assessor Parcel Numbers
APP	Avian Protection Plan
applicant	Sacramento Valley Energy Center, LLC
ATCM	Airborne Toxic Control Measure
ATCT	air traffic control tower
ATVs	all-terrain vehicles
AWCU	Aerojet Waste Consolidation Unit
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
BESS	Battery Energy Storage Systems
BIA	Bureau of Indian Affairs
BMP	Best Management Practices
BMP#	Tier # Best Management Practices
BMS	Battery Management Systems
BPP	Bat Protection Plan
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model

CALGreen	California Green Building Standards
CALGreen Code	California Green Building Standards Code
CalOSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Standards Code
CCAA	California Clean Air Act
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
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
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
Construction General Permit	General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002
County	Sacramento County
CRHR	California Register of Historical Resources
CRMP	Cultural Resource Management Plan
CRPR	California Rare Plant Rank
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
dBA/DD	A-weighted decibels per doubling of distance
DBH	diameter at breast height
DC	direct current
DCH	Designated Critical Habitat
Delta	Sacramento–San Joaquin River Delta

DOC	California Department of Conservation
DPM	diesel particulate matter
DPR	Department of Pesticide Regulation
DPR	Department of Parks and Recreation
DRAC	Design Review Advisory Committee
Drainage Study	Level 3 Drainage Study
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
ECORP	ECORP Consulting, Inc.
EFH	essential fish habitat
EIR	Environmental Impact Report
EMD	Environmental Management Department
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	Environmental Site Assessment
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
FEW	freshwater emergent wetland
FHWA	Federal Highway Administration
FHWA-RD-77-108	Federal Highway Administration Highway Traffic Noise Prediction Model
FHSZ	Fire Hazard Severity Zone
FHZ	Flood Hazard Zone
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
FTA	Federal Transit Administration
GA-80	General Agricultural (80 acres)
gen-tie	generation tie
GET	Groundwater extraction and treatment
GHG	greenhouse gas
GPS	global positioning system
Groundwater Study	Water Supply Assessment, Dudek also prepared a Groundwater Resource Impact Analysis
GSP	Groundwater Sustainability Plan
GWP	Global Warming Potential
HAPs	hazardous air pollutants
HASP	Health and Safety Plan
HCFCs	Hydrochlorofluorocarbons
HCP	Habitat Conservation Plan
HFCs	Hydrofluorocarbons

High GWP	High Global Warming Potential
HRA	health risk assessment
HVAC	Heating Ventilation and Air Conditioning
Hz	hertz
IBMI	Ione Band of Miwok Indians
ICF	Institute for Canine Forensics
LID	Low Impact Development
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IR	Industrial Reserve
IRCTS	Inactive Rancho Cordova Test Site
IS	Initial Study
ITP	Incidental Take Permit
KOPs	key observation points
kg	kilograms
kV	kiloVolt
L-1	linkage area
LDL	Larson Davis Laboratories
L_{dn}	Day-Night Noise Level
LED	Light-emitting diode
L_{eq}	Equivalent Noise Level
LID	Low Impact Development
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
Mather Air Force Base	Mather Airport was formerly a military facility
MIC	maximum instantaneous charge
MLD	most likely descendant
MND	Mitigated Negative Declaration
MMRP	Mitigation Monitoring and Reporting Program
mph	miles per hour
MUN	Municipal and Domestic Supply
MW	megawatt
MS4	Municipal Separate Storm Sewer System
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center

NDMA	N-Nitroso dimethylamine
NEC	National Electrical Code
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NMC	nickel manganese cobalt
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	National Park Service
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O	Open Space
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHV	off-highway vehicle
OHVA	define
OHWM	ordinary high water mark
OU	Operable Unit
OWCA	Oak Woodlands Conservation Act
PAR	Property Analysis Record
PCE	tetrachloroethene
PFCs	Perfluorinated Chemicals
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
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPU	Preserve Planning Unit
PPU 1	Preserve Planning Unit 1
PPV	peak particle velocity
PRC	Public Resources Code
proposed project	Coyote Creek Agrivoltaic Ranch project
PUC	Public Utilities Code
PV	photovoltaic
RD-10	low density residential
Recovery Plan	2005 Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon
RMS	root mean square
ROD	Record of Decision
ROG	reactive organic gases
RPS	Renewables Portfolio Standard

RTMP	Road and Trail Management Plan
Rule	Revised Definition of Waters of the United States rule
RWD	Reports of Waste Discharge
RWQCB	Regional Water Quality Control Board
SACDOT	Sacramento County Department of Transportation
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCWA	Sacramento County Water Agency
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
SMARA	California Surface Mining and Reclamation Act of 1975
SMUD	Sacramento Municipal Utility District
SO_2	sulfur dioxide
SO_X	oxides of sulfur
SRAs	state responsibility areas
SSBMI	Shingle Springs Band of Miwok Indians
SSHCP	South Sacramento Habitat Conservation Plan
SSQP	Sacramento Stormwater Quality Partnership
State Parks	California State Parks
Superfund Act	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SVRA	State Vehicular Recreation Area
SWHA	Swainson’s Hawk
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCL	Tribal Cultural Landscape
TANF	Tribal Temporary Assistance for Needy Families
TCPs	Traditional Cultural Properties
TCRs	tribal cultural resources
TCR AMP	Tribal Cultural Resources Avoidance and Minimization Plan
TCE	trichloroethene
Terracon	Terracon Consultants, Inc.
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
UL	Underwriters Laboratory Solution
UPA	Urban Policy Area
USACE	United States Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
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
WR	Wilton Rancheria
WSA	Water Supply Assessment
WST	western spadefoot toad
YSAQMD	Yolo-Solano Air Quality Management District

1 EXECUTIVE SUMMARY

This environmental impact report (EIR) describes the potential environmental impacts of developing the Coyote Creek Agrivoltaic Ranch 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

Sacramento Valley Energy Center, LLC (applicant) proposes to construct, operate, and ultimately decommission an approximately 200-megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy generating facility and associated 4-hour/100 MW AC battery energy storage system (BESS). The project site comprises numerous parcels that total approximately 2,704 acres of land area in the Consumnes community of unincorporated Sacramento County. Of the approximately 2,704-acre project site, approximately 1,412 acres would be developed to support the project. This developed portion of the project site is collectively referred to as the "solar development area," and includes the proposed footprint of project construction activities and development. The remaining approximately 1,292 acres are referred to as "adjacent other lands" and would not be developed as part of the project. "Adjacent other lands" are lands within the project site but located outside of the solar development area. The solar development area includes all locations used for temporary construction and all permanent project infrastructure. Areas denoted as adjacent other lands would be appropriately delineated with flagging, and construction areas activities would be required to avoid adverse impacts within these areas.

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 proposed project components include an on-site substation, inverters, solar array, fencing, roads, supervisory control, and data acquisition (SCADA) system, generation tie (gen-tie) line, and switchyard. The project's 230-kilovolt (kV) gen-tie line would be approximately 1.3 miles long and would parallel the boundary of the California State Parks Off-Highway Motor Vehicle Division's Prairie City State Vehicle Recreation Area (SVRA). The gen-tie line would connect with a new switchyard that would be constructed to interconnect into the Sacramento Municipal Utility District (SMUD) 230 kV

powerline in proximity to the Prairie City SVRA. Following construction of the switchyard, SMUD would own and operate the switchyard facilities.

Project construction would take approximately 18 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 16, "Alternatives."

NO PROJECT ALTERNATIVE

As described in Chapter 16, "Alternatives", of the Draft EIR, CEQA requires an evaluation of a No Project alternative 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 the 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 16, "Attainment of Project Objectives" section.

ALTERNATIVE 1: BIOLOGICAL RESOURCES ALTERNATIVE

As described in Chapter 16, "Alternatives", of the Draft EIR, a Biological Resources Alternative (Alternative 1) was developed to reduce the number of trees (including oak species) that would be removed compared to the proposed project. As identified in this EIR, the proposed project would not result in any significant and unavoidable impacts to biological resources with the exception of a cumulatively considerable impact related to oak woodlands. The focus of this alternative design refinement process was to reduce impacts to trees (including oak species) and the impact to oak woodlands that would be required for the project, while accomplishing the basic project objectives.

Alternative 1 is a proposed approximately 200 MW solar photovoltaic energy-generating facility located in the same general area as the proposed project, but would include shifting approximately 55 acres of solar panels from the proposed project's solar development area into a 480-acre parcel immediately adjacent to the southwest corner of the proposed project site. This 480-acre parcel is not a part of the proposed project site or proposed project solar development area.

Like the proposed project, Alternative 1 would be developed by applicant to sell electricity and all renewable and environmental attributes to SMUD under long-term contracts to help meet California Renewables Portfolio Standard goals.

Alternative 1 would provide approximately the same amount of renewable energy as under the proposed project. 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.

For additional details about Alternative 1, see Chapter 16, “Alternatives.”

Alternative 2: Scott Road Buffer Alternative

As described in Chapter 16, “Alternatives”, of the Draft EIR, a Scott Road Buffer Alternative (Alternative 2) was developed to remove all portions of the solar development area within 500 feet of the centerline of Scott Road, with the intent to reduce visual effects from this viewing location. This would result in the removal of approximately 181 acres of solar development area that, under the proposed project, would be within 500 feet of the centerline of Scott Road.

The proposed project, as detailed in this EIR, would affect existing views available along Scott Road. The Circulation Element of the Sacramento County General Plan identifies Scott Road as warranting scenic corridor protection (Sacramento County General Plan, page 36). Policy CI-58 indicates that the County will “[c]ontinue to provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road.” The impact to views from Scott Road is significant and unavoidable under the proposed project.

In the County’s Zoning Code, “[t]he scenic corridor for a scenic highway or scenic country route shall include a horizontal distance of 500 feet on each side of the center line with a minimum distance of 300 feet beyond the right-of-way or the edge of the stream” (Sacramento County Zoning Ordinance, Chapter 7, page 7-45). Under Alternative 2, a 500-foot buffer would be applied from the centerline of Scott Road in each direction.

Similar to Alternative 1, additional solar development area under Alternative 2 would be added to a property that is southwest of the proposed project site so that Alternative 2 would have approximately the same acreage in the solar development area as under the proposed project. Approximately 181 acres of solar development area would be located on this 480-acre parcel (Assessor Parcel Numbers [APN] 073-0020-015-0000), which would be added to the Alternative 2 site.

Alternative 2 would provide approximately the same amount of renewable energy as under the proposed project. The energy storage elements of Alternative 2 would help balance supply and demand by capturing and storing renewable energy generated during daylight hours to meet peak evening demand.

For additional details about Alternative 2, see Chapter 16, “Alternatives.”

ORGANIZATION OF THE 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 3-15, 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 16, 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 17, 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 18, Bibliography.** Lists all resources used to prepare the Draft EIR.
- **Chapter 19, Acknowledgements.** Identifies individual contributors to the preparation of 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: Have a Substantial Adverse Effect on a Scenic Vista	S	No mitigation is available.	SU
Impact AE-2: Substantially Damage Scenic Resources within a State- or County-Designated Scenic Highway	S	*AE-2. Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success.* The project applicant shall implement the County-approved landscape screening and irrigation plan (attached as Appendix AE-1), which shall include oak thickets comprised of evergreen interior live oaks (*Quercus wislizeni*) that will form a dense native tree with a low canopy that can live for many decades. Native shrubs shall also be planted, which shall be comprised of fast-growing drought-resistant locally native shrubs. Supplemental watering shall be provided at a minimum for the first 5 years after planting, and shall be continued thereafter as long as necessary to ensure the survival of the plantings. The landscape screening plan shall include specific details as to the species, sizes of plants, method of planting, method and frequency of watering, maintenance activities (such as weeding and inspection of watering systems), and frequency of monitoring. After the landscape planting has been implemented, annual monitoring reports related to the health of the plantings shall be provided to the County during the five-year establishment period. Dependent on establishment success, the county may request additional monitoring reports thereafter. Should the overall efficacy of the landscaping be reduced due to excess plant mortality, plantings shall be replaced by the project applicant, and supplemental watering for the replacement plants shall be provided by the project applicant until the replacement plants are established. The landscape planting shall be maintained by the project applicant throughout the project lifespan and if supplemental watering is required to support the landscape screening throughout the project's lifespan,	SU

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		the applicant shall provide it (anticipated to be at least 35 years, but potentially longer if the project remains economically viable).	
	S	*Implement Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities).*	SU
Impact AE-3: Substantially Degrade the Existing Visual Character or Quality of the Project Site	S	*Implement Mitigation Measure AE-2 (Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success).*	SU
	S	*Implement Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities).*	SU
Impact AE-4: Create Substantial New Sources of Light and Glare	PS	*AE-4. Prepare a Lighting Plan.* The project applicant shall prepare a lighting plan for County review and approval that includes implementation of the following measures. <u>Construction and Decommissioning</u> • If nighttime lighting is required where construction areas are 500 feet or closer to Scott Road or to any facilities or roadways at the Prairie City SVRA, 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 roadway/SVRA facility. • 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. • All work zone illumination shall use the minimum foot-candles necessary to safely perform the required work. • 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. <u>Operation</u> • Shield or screen all exterior lighting fixtures to direct the light downward, focus on the area to be illuminated, and prevent light spillover onto adjacent properties.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Place and shield or screen lighting needed for security so as not to disturb adjacent properties or passing motorists. • High intensity or high brightness light fixtures (e.g., harsh mercury vapor, low-pressure sodium, or fluorescent bulbs) shall not be used. Light-emitting diode (LED) lighting shall be used to the maximum extent feasible. • All nighttime exterior lighting shall either be motion-controlled, or shall be turned on and off when needed using a manual switch.	
Chapter 4, Agricultural Resources			
Impact AG-1: Conversion of Agricultural Land to Non-Agricultural Use	PS	*AG-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. **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.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• 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; (3) pollinator habitat; and (4) 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 is not recommended in June, July, or August due to high temperatures in the region and subsequent low germination success. As such, seeding is recommended and optimal from October through January or February in this region to utilize natural precipitation for irrigation and increase overall germination survivorshipThe vegetation is intended to	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		reestablish natually following construction, additional seeding may; be required if a groundcover fails to be established and meet the requirements of the Agricultural Management Plan. **GRAZING AND POLLINATOR HABITAT 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 six inches in accordance with local fire codes. 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. **VEGETATION AND POLLINATOR HABITAT MONITORING PLAN** Annual Vegetation and Grazing Monitoring 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 subsequent reports shall be submitted to Sacramento County Planning and Environmental Review. These reports shall document the estimated species coverage and diversity, species health and overall vigor, the establishment of volunteer native species, topographical/soils conditions, problem weed species, whether there is significant drought stress, and remedial measures recommended to ensure the habitat function and value within the solar	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		facility is consistent with the habitat function and value outside of the solar facility. These reports shall include at a minimum: • The name, title, and company of all persons involved in restoration monitoring and report preparation. • Maps or aerials showing restoration areas, transect locations, and photo documentation locations. • An explanation of the methods used to perform the work, including the number of acres treated for removal of non-native plants, any revegetation or weed control efforts undertaken. • An assessment of the achievement of the relevant performance for vegetation success and how the vegetation management compares to non-managed areas located outside of the fenced solar facility. **GRAZING MONITORING PLAN** Annual Vegetation and Grazing Monitoring 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 regarding the level of grazing use at the project site. The annual reports and subsequent reports shall be submitted to Sacramento County Planning and Environmental Review, the County's Assessor's Office, 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 native grassland ground cover that is utilized by biological resources native to the project area.	

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, and AQ-2e.*	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 pads should be laid as soon as possible after grading unless seeding or soil binders are used.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• 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 Off-Road Equipment Exhaust-Related Emissions during Construction and Decommissioning.* • The applicant shall require off-road diesel-fueled equipment with engines larger than 50 horsepower to 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	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Measure AQ-2c 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. Submit Construction and Decommissioning Emissions Control Plans.* • 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 using the new equipment. 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	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		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. • Prior to decommissioning of the facility, the construction contractor shall submit a Construction Emissions Control Plan, subject to the same requirements and stipulations as described above.	
	PS	*AQ-2d. Off-Site Construction and Decommissioning Mitigation.* • If, based upon the incorporation of all measures described above in Mitigation Measures AQ-2a through AQ-2c, NO_X or PM_{10} emissions still exceed the daily SMAQMD threshold for NO_X and the non-zero threshold for PM_{10}, the project shall participate in the SMAQMD's Offsite Mitigation Program by paying to SMAQMD a mitigation fee for construction and decommissioning activities, to be determined at the time of construction and decommissioning based on the submitted equipment inventories 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 non-zero threshold 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	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		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-2e. Implement Best Management Practices for Reducing Operational PM Emissions.* The applicant shall include as a condition of building permit issuance, 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.	LTSM
Impact AQ-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations	PS	*AQ-3: Site Investigation for Potential Naturally Occurring Asbestos.* A site investigation shall be performed to determine whether and where NOA is present in the soil and rock on the project site in areas that would be disturbed by the project and that are within "areas moderately likely to contain NOA," as determined by the map in California Geological Survey's report titled Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California and mapped in Plate AQ-1, above. The site investigation shall include the collection of soil and rock samples by a California Registered geologist as determined by the geologist and in coordination with the County. If the site investigation determines that NOA is not present on the project site, the project applicant shall submit a Geologic Exemption as allowed under Title 17, Section 93105,	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining (Asbestos ATCM). If the site investigation determines that NOA is present on the project site, the project applicant shall submit an Asbestos Dust Mitigation Plan that includes the control measures required by the Asbestos ATCM for review and approval by the District before beginning any ground disturbance activity. Upon approval of the Asbestos Dust Mitigation Plan by the District, the applicant shall ensure that construction contractors implement the terms of the plan throughout the construction period. The Asbestos Dust Mitigation Plan will also be a required component of the bonded decommissioning plan that the contractor shall implement throughout the decommissioning period.	
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.* • **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. • **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 known or potential habitat for western pond turtle 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. • **Equipment Storage and Fueling.** During construction activities, equipment storage and staging shall occur only in designated areas of the development footprint. Fuel storage and equipment fueling shall occur a minimum of 100 feet away from waterways, stream channels, stream banks, and other environmentally sensitive areas (e.g., known rare plant occurrences) 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. • **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. • **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. • **Construction Lighting.** All temporary construction lighting (e.g., lighting used for security or occasional nighttime equipment maintenance or other limited scope of work such as to avoid extreme	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		heat) shall be directed away from adjacent natural habitats, and particularly riparian and wetland habitats and wildlife movement areas. • **Biological Monitor.** A qualified biological monitor shall be on-site during construction activities as needed, as described below in Mitigation Measure BR-1b (Special Status Plants), Mitigation Measure BR-1c (Western Spadefoot), Mitigation Measure BR-1d (Western Pond Turtle), Mitigation Measure BR-1f (Swainson's Hawk), Mitigation Measure BR-1g (Tricolored Blackbird), Mitigation Measure BR-1h (Valley Elderberry Longhorn Beetle)), Mitigation Measure BR-1l (Nesting Raptors and Migratory Birds), and Mitigation Measure BR-1m (Crotch's Bumble Bee). ▪ **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 special-status 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 special-status 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. • **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. • **Revegetation.** Cut-and-fill slopes shall be revegetated with native or existing non-invasive, non-native plants (e.g., non-native grasses)	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		suitable for the altered soil conditions. Non-native plants identified as a State listed noxious weed or as a California Department of Food and Agriculture rated A through C invasive plant are prohibited. • **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. • **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 workday, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place. • **No Pets in Construction Areas**. To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a project site. • **Minimize Effects from Temporary Channel Re-Routing.** If necessary to temporarily re-route a stream, creek, or drainage in order to conduct project work activities (i.e., conducting work when the channel is naturally dry is not feasible), the re-routing will be completed in a manner that minimizes impacts to beneficial uses and habitat. The following measures will be employed to minimize disturbances that will adversely impact water quality: ▪ No equipment will be operated in areas of flowing or standing water. ▪ Construction materials and heavy equipment must be stored outside of the active flow of any waters. • **Design for Stream Channel Alterations.** Local, native materials will be used as fill material to the extent practicable.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• **Prevent Invasive Species Spread.** Construction- and operations-related activities shall be conducted in a manner that avoids the spread of invasive species. Such prevention measures shall include the following: ▪ Before bringing any equipment onto the project site, equipment must be cleaned of mud, dirt, and plant material. Cleaning shall occur in the infested area, or another appropriate off-site location as approved by Sacramento County. ▪ Ground-disturbing activities shall start in un-infested areas and move to infested areas to the maximum extent feasible. Where work must occur in infested areas, equipment must be cleaned of any mud, dirt, and plant material before moving into un-infested areas; or the project proponent shall apply an appropriate manual, mechanical, or chemical (if authorized) treatment in accordance with County and State regulations prior to working in infested areas. ▪ Invasive plant prevention techniques shall be incorporated into operations and maintenance plans. ▪ A qualified biologist shall be retained to conduct an annual weed survey in spring for five years following construction along all road shoulders, ditches and other linear aquatic features, and the fence line within portions of the project site disturbed during construction for invasive weeds or other exotic plant species. Where new weed infestations (relative to pre-project conditions) have been identified or where known prior noxious weed infestations appear to have expanded as a result of project developments, the project proponent shall apply an appropriate manual, mechanical, or chemical (if authorized) treatment in accordance with County and State regulations. • **Blasting Plan.** Implement Mitigation Measure NOI-1b, Prepare and Implement a Blasting Plan, which includes optimizing blast design parameters (e.g., charge size, delay intervals, etc.) and using blast mats to cover the blast area to reduce noise levels; and implement noise monitoring to determine if additional real-time sound attenuating measures, as specified, are necessary. In addition to	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		requirements in NOI-1b, which are intended to ensure compliance with noise related regulations, additional sound attenuating measures, as described in NOI-1b, may be needed to reduce potential noise- and vibration- related impacts to special-status species, as identified in the species-specific mitigation measures subsections provided below.	
	PS	*BR-1b: Avoid, Minimize, and Mitigate for Impacts on Special-Status Plants.* • Implement Mitigation Measure BR-1a, in particular the following: Construction Fencing, Erosion Control, Equipment Storage and Fueling, Erodible Materials, Dust Control, Construction Lighting, Biological Monitor, Training of Construction Staff, Soil Compaction, Revegetation and Prevent Invasive Species Spread. ▪ 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 under "Training of Construction Staff" Mitigation Measure BR-1a. • For special-status plant occurrences identified during project surveys to be within 100 feet of the solar development area (i.e., spiked western rosinweed, Ahart's dwarf rush, and pincushion navarretia), install environmentally sensitive area (ESA) fencing to protect and avoid these occurrences from inadvertent encroachment from adjacent construction activities. ESA fencing and/or appropriate signage shall be installed at a minimum of 20 feet from the edge of special-status plant populations. The project shall avoid performing any construction-related activities within the ESA. For work that cannot be avoided in the ESA, a biological monitor shall be present when project construction-related activities occur. • For special-status plant occurrences within the solar development area (i.e., spiked western rosinweed), install ESA fencing to protect and avoid all (i.e., complete avoidance) or portions of known occurrences from direct disturbances during construction (i.e., spatial avoidance) to the maximum extent feasible. ESA fencing shall be installed as described above. A biological monitor shall be	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		present when project construction-related activities occur within the ESA. • Where spatial avoidance during construction, as described above, does not avoid effects, implement temporal avoidance by scheduling work activities (e.g., overland travel, grading, etc.) within known occurrences of spiked western rosinweed to occur after the majority of plants within the occurrence have set seed for the year (i.e., typically in late summer/early fall), as determined by a qualified botanist. If ground-disturbing activities must be conducted within known occurrences of this species, the following shall also be required in addition to temporal avoidance: ▪ salvage topsoil from occupied areas prior to ground-disturbances for reestablishment once construction is complete, ▪ retain a qualified botanist to monitor during initial ground-disturbing activities within known occurrences of this species to ensure all required measures are being implemented, and ▪ retain a qualified botanist to conduct periodic surveys throughout the operational life of the project (including the first year post-construction and approximately every five years on average thereafter, with the goal of targeting years with sufficient rainfall for successful germination of this species). The intent of monitoring during operations is to confirm the re-establishment and continued occupancy of spiked western rosinweed within each recorded occurrence where temporal avoidance is implemented and to ensure no net loss of occurrences of this species. • Incorporate specific grazing/mowing regimes and other relevant management measures consistent with the long-term preservation of spiked western rosinweed occurrences on-site into the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, “Agricultural Resources”), such as mowing after seed set, incorporating compatible grazing prescriptions, and installing permanent ESA signage near spiked western rosinweed occurrences within/adjacent to the solar development area to alert	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Operations and Management staff of the ESA and any associated operational restrictions. • Implement the Aquatic Resource Mitigation Plan, as required under Mitigation Measure BR-3, to protect adjacent wetlands/waters within 50 feet from the solar development area that support special-status plants from indirect impacts.	
	PS	*BR-1c: Avoid, Minimize, and Mitigate for Impacts on Western Spadefoot.* • Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands and Other Waters). • Implement Mitigation Measure AG-1 (see Chapter 4, "Agricultural Resources"). • Implement Mitigation Measure BR-1a (Construction Best Management Practices). ▪ Western spadefoot shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. ▪ In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented in the solar development area, 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 western spadefoots are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials. • Avoid Aquatic Habitat or Implement Work Window: Where feasible, 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 western spadefoot. All construction and operations activities are prohibited within this buffer area. If aquatic habitats are not avoided, project ground-disturbing activities within such areas (including overland driving of vehicles and equipment) shall be restricted to the Western Spadefoot Work Window (see below).	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Western Spadefoot Work Window: Project ground-disturbing activities (including overland driving of vehicles and equipment) within suitable habitat for western spadefoot (e.g., grassland, woodland) shall occur outside of this species' breeding and dispersal seasons (i.e., work to occur after May 15 and before October 15). • Pre-construction Survey: If project ground-disturbing activities must be implemented in potentially suitable habitat for this species 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 conduct a pre-construction survey of the active work areas (including access roads) for western spadefoot prior to initial ground disturbance and prior to work activities in mornings following measurable precipitation events. The survey will include searching small mammal burrows, crevices, and other potential refugia, as well as underneath equipment and inside uncapped stored pipes that are 3 cm (1.2 inches) or greater in diameter. Construction may commence once the biologist has confirmed that no spadefoot are in the work area. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below. • Construction Monitoring: If project ground-disturbing activities must be implemented in potentially suitable habitat for this species during the breeding and dispersal season (October 15 to May 15), a qualified biologist experienced with western spadefoot identification and behavior shall monitor the solar development area. The qualified biologist shall be on-site daily while construction-related activities are taking place and shall inspect the solar development area for these species every morning 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 western spadefoot enters an active construction zone. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below. • Spadefoot Entrapment Avoidance: All excavated steep-walled holes or trenches more than six inches deep shall be covered with plywood	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		(or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks (maximum 2:1 slope) at the end of each workday or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches shall be inspected by the qualified biologist each morning prior to and each evening after work activities for the day to ensure that no wildlife has become entrapped and/or to relocate any wildlife that may have become trapped to suitable habitat outside the construction area; relocation would take place only by a qualified biologist with appropriate handling permits. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within potential habitat shall be inspected for western spadefoot by the qualified biologist prior to being moved. If western spadefoot is encountered, refer to WS-6, below. • Spadefoot Encounter Protocol: If a western spadefoot is encountered during project activities, the qualified biologist shall notify CDFW and any other appropriate responsible Agency (e.g., USFWS if the species has become federally listed) immediately. Project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area 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 (if relevant) 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 (if relevant) that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect western spadefoot. Any worker who inadvertently injures or kills a 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 CDFW and USFWS (if relevant) immediately. • Rodent Control: Rodent control shall be allowed only in and around human-occupied portions of the project site.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Spadefoot Friendly Fencing Specifications: During operations, if woven wire fence to be installed around the perimeter of solar array fields would not allow for the passage of western spadefoot (i.e., spacing of woven wire is not sufficient to allow for passage of a western spadefoot), incorporate appropriate design features along the bottom of the perimeter fencing to allow for the movement of western spadefoot across fencing (e.g., incorporate a minimum 3 inch-wide gap between the ground surface and bottom of the fence).	
	PS	*BR-1d: Avoid, Minimize, and Mitigate for Impacts on Northwestern Pond Turtle.* • Implement Mitigation Measure BR-3 (State and Federally Protected Wetlands and Other Waters). • Implement Mitigation Measure AG-1 (see Chapter 4, "Agricultural Resources"). • Implement Mitigation Measure BR-1a (Construction Best Management Practices). ▪ In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented in the solar development area, 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 turtles are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials. ▪ This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • Avoid Aquatic Habitat Where Feasible: Where feasible, temporary construction fencing shall be installed a minimum of 300 feet from the potential suitable aquatic habitat for northwestern pond turtle (e.g., streams, ponds, freshwater emergent wetlands, etc.). All construction and operations activities shall be prohibited within this buffer area, or implement the Western Pond Turtle Work Window (see below).	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Western Pond Turtle Work Window: For any project-related activities that occur within 300 feet of suitable aquatic habitat, 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. • Western Pond Turtle Pre-Construction Survey: a qualified biologist shall conduct a pre-construction survey for northwestern pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable aquatic habitat. Concurrently with the pre-construction survey, assessments for nesting pits and/or wintering site (e.g., burrows) shall be conducted and any identified sites shall be delineated with high visibility flagging or fencing and avoided during construction activities. • Western Pond Turtle Encounter Protocol: If a northwestern pond turtle, nesting pits, and/or wintering sites are encountered during the pre-construction 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, project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area on its own volition. If necessary, the qualified biologist shall notify CDFW to determine the appropriate procedures related to relocation to nearby suitable habitat. If the animal is handled, a report shall be submitted within one business day to CDFW that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect northwestern pond turtle. Any worker who inadvertently injures or kills a northwestern pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the qualified biologist. • Work in Aquatic Habitat, Dewatering and Exclusion: If project does not avoid potential aquatic habitats, as described above, scheduled work activities when habitat is naturally dry (e.g., in seasonal aquatic	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		habitats). If project activities must occur in suitable aquatic habitat that is wetted, the following shall be implemented: The wetted aquatic habitat shall be dewatered and remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for a minimum of 15 days prior to the initiation of construction activities. If complete dewatering is not possible, CDFW shall be contacted to determine what additional measures may be necessary to minimize effects to northwestern pond turtle. After aquatic habitat has been dewatered for a minimum of 15 days, exclusion fencing shall be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat within work area boundaries. Exclusionary fencing shall be erected 36 inches above ground and buried at least 6 inches below the ground to prevent any northwestern pond turtles from attempting to burrow or move under the fence into the work area. In addition, high-visibility fencing shall be erected to identify work area limits and to protect adjacent habitat from encroachment of personnel and equipment. Northwestern pond turtle habitat outside exclusionary fencing shall be avoided by all construction or maintenance personnel. The fencing and work area shall be inspected by a qualified biologist before the start of each workday and periodically throughout each workday to ensure that the fencing is intact and that no northwestern pond turtles have entered the work area. Fencing shall be maintained by the contractor or maintenance entity until completion of the work, upon which it shall be completely removed. If, after exclusion fencing and dewatering, northwestern pond turtles are found within the work area, the qualified biologist shall contact CDFW to discuss the next best steps such as the relocation of the individual(s) to suitable aquatic habitat outside the exclusion fencing.	
	PS	*BR-1e: Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat.* • Implement Mitigation Measure AG-1 (see Chapter 4, “Agricultural Resources”). • Implement Mitigation Measure BR-1a (Construction Best Management Practices).	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • 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, where feasible in the solar development area (i.e., temporary impact areas) 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 by a qualified biologist 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	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		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 within temporary impact areas. ▪ 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 additional measures described below if the performance standards of no net loss of burrowing owl nesting and foraging habitat value are not being met. o 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 implemented 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 to achieve the no net loss performance standard through acquisition of a conservation easement or mitigation credits from an appropriate mitigation bank, or another form of mitigation, as approved by CDFW. Compensation may be layered with other mitigation requirements, such as for Swainson's hawk foraging habitat (see Mitigation Measure BR-1f, if acceptable by CDFW).	
	PS	*BR-1f: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Nesting and Foraging Habitat.* • Implement the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources").	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Implement Mitigation Measure BR-1a (Construction Best Management Practices). • This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • During the two survey periods immediately preceding commencement of construction occurring 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). • 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 mile of the project site during preconstruction Swainson's nesting surveys described above, 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 within 0.5 mile of the project site during construction. • If impacts on SWHA individuals cannot be fully avoided, obtain an incidental take permit from CDFW for anticipated take of SWHA nesting sites and foraging habitat and for potential project-related take of individuals. • To minimize potential for collision by or electrocution of nesting raptors, including Swainson's hawk, or migratory birds from project-related electrical infrastructure, the electrical collection infrastructure shall conform with the most current edition of the Avian Power Line	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		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 (e.g., grassland and other seasonal open areas) 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) that provide permanent protection of mitigation lands. Under the County of Sacramento program, mitigation for permanent loss of foraging habitat is required for the change in habitat value from the existing condition (100 percent of foraging habitat value remaining based on the AG-80 zoning) to the post-project habitat value. Permanent impacts to foraging habitat from the proposed project would be determined once final approved construction design plans are completed and shall be compensated for at 100 percent of the acres of permanent impact; at the time of writing of this document, the total permanent impact on foraging habitat was estimated at 911.10 acres corresponding to a compensatory mitigation requirement of 911.10 acres.[1] 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 for foraging habitat is achieved outside the Swainson's Hawk Mitigation Program, it shall at minimum meet the mitigation requirement of the Program.	

[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
		• The project applicant shall avoid removal of known active Swainson's hawk nest trees2 to the maximum extent practicable. Compensation shall be provided for the permanent loss of occupied Swainson's hawk nesting habitat, (i.e., removal of known active nest sites/trees to achieve a performance standard of no net loss of habitat acreage, function and values to Swainson's hawk through implementation of a Tree Resource Revegetation Plan (see Mitigation Measure BR-2). A Tree Resource Compliance and Mitigation Memorandum prepared by the Applicant shall be updated to meet the requirements identified herein for the Tree Resource Revegetation Plan for approval of the County prior to project-related tree removal. • Incorporate measures into the Tree Resource Revegetation Plan that shall: (1) ensure mitigation be directed to lands identified on the Open Space Vision Diagram and associated component maps in the Sacramento County General Plan (per General Plan Policy CO-60), (2) ensure mitigation lands are permanently protected (per General Plan Policy CO-62) and have a monitoring and management program with established funding (per General Plan Policy CO-66), (3) ensure compensatory mitigation has similar nesting habitat value for Swainson's hawk (e.g., occupied nesting habitat or adjacent to occupied nesting habitat; occupied being equivalent to having one or more nests active in the past five years and adjacent being equivalent to being within 10 miles from known active nest sites for this species), (4) ensure removal of known nest sites/trees occurs outside the Swainson's hawk nesting season and when the nest site/tree is not active as determined by a qualified biologist (generally between October 1 and February 1), and	

[2] An active nest site/tree includes any nest site/tree that has been documented to be active by Swainson's hawk within the prior five years.

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		(5)replace known active nest sites/trees[2] in kind at a minimum ratio of 3:1 and include monitoring annually for five years to assess the effectiveness of tree replacement. The performance standard for nest tree replacement shall be 65 percent survival of all replacement plantings after five years. The Tree Resource Revegetation Plan shall be reviewed and approved by CDFW and the County prior to removal of any trees, including those containing raptor nest structures.	
	PS	*BR-1g: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird.* • Implement the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources"). • Implement Mitigation Measure BR-1a (Construction Best Management Practices). ▪ This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • 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,	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		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.	
	PS	*BR-1h: Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle and Their Habitat.* • Implement Mitigation Measure BR-1a (Construction Best Management Practices). ▪ This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • Project disturbances shall be avoided within 20 feet from elderberry shrubs potentially suitable for this species (i.e., with stems one inch or greater in diameter). • Indirect impacts to individual elderberry shrubs potentially suitable for inhabitation by Valley elderberry longhorn beetle (i.e., with stems one inch or greater in diameter) and that are located between 20 to 165 feet of project ground disturbances shall be avoided by implementation of the following additional measures:	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ *Avoidance and Fencing*. Project activities that may damage or kill an elderberry plant (e.g., trenching, paving, etc.) shall be avoided or compensated through transplanting existing elderberry shrubs and/or planting new seedling elderberry plants in areas not subject to project disturbance at a performance standard 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. ▪ *Transplanting*. If full avoidance of elderberry shrub(s) in the development footprint is not possible, the project proponent will transplant shrub(s) using appropriate best management practices. ▪ *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*. 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 within the solar development area shall be limited to the season when adult valley elderberry longhorn beetles are	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		not active (i.e., August through February) and shall avoid damage to the elderberry plant. ▪ *Construction Monitoring*. A qualified biologist shall monitor the solar development area 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.	
	PS	*BR-1i: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp.* • Implement Mitigation Measure BR-1a (Construction Best Management Practices). • Federally listed vernal pool branchiopod species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • 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 practicable, implement Mitigation Measure BR-3, Avoid, Minimize, Restore, 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 and vernal pool tadpole shrimp. Direct and indirect effects to on-site suitable aquatic habitats that may support federally listed vernal pool branchiopods shall be offset through on-site 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	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		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 USFWS pursuant to section 7 of the ESA. ▪ As part of the Aquatic Resources Mitigation Plan to be implemented as part of Mitigation Measure BR-3, incorporate preservation of suitable aquatic habitat for special-status aquatic invertebrates that occurs within the Mather Core Area of the project site (i.e., Barton Ranch property) to the maximum extent practicable as a component of the compensatory mitigation, or otherwise compensate for the permanent, temporary, and indirect impacts on suitable habitat for special-status aquatic invertebrates within the Mather Core Area portion of the project site with mitigation lands that also occur within the Mather Core Area.	
	PS	*BR-1j: Avoid, Minimize, and Mitigate for Impacts on American Badger.* • Implement Mitigation Measure BR-1a (Construction Best Management Practices). ▪ This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • 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, blue oak woodlands, and seasonally inundated wetlands/waters) within the solar development area. 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	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		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 badgers 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.	
	PS	*BR-1k: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds.* • Implement Mitigation Measure BR-1a (Construction Best Management Practices) ▪ Protection measures for nesting raptors and migratory birds shall be included in the WEAP described under "Training of Construction Staff" in Mitigation Measure BR-1a. • A qualified biologist shall conduct a survey for nesting birds within one week prior to vegetation/tree removal or ground-disturbing activities within suitable habitat during the nesting season (i.e., February 1 through August 31). The survey shall cover the limits of construction and accessible suitable nesting habitat within 500 feet (and within 0.25 mile for potential raptor nests). 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 500 feet (or more for some raptors) and shall be determined based on factors such as the	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		species of bird, topographic features, existing background disturbance levels, 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. Typical nest buffers implemented are as follows: ▪ 50-150 feet for passerines and other non-raptors ▪ 500 feet for raptors and owls • 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. • Vegetation or tree removal shall be restricted to the period of September 1 through January 31, to avoid the bird nesting season, including for Swainson's hawk (see Mitigation Measure BR-1f). 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 above, 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. Tree removal must also conform to requirements stated in Mitigation Measure BR-1f, for Swainson's hawk, as applicable. • An Avian Protection Plan (APP) shall be prepared and implemented in coordination with CDFW and USFWS to reduce/eliminate impacts to avian species during construction, operations, and maintenance. An Avian Protection Plan is often prepared in combination with a Bat Protection Plan (see Mitigation Measure BR-1l, for Bats) for solar	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		facilities, becoming the Avian and Bat Protection Plan (ABPP). The APP (or ABPP, if combined) shall include the following elements: ▪ A description of conditions for bird species present in and near the solar development area, including results of site-specific surveys. ▪ An assessment of potential risks of project construction, operation, and maintenance on birds 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 bird 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 bird species. ▪ 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.	
	PS	*BR-1l: Avoid, Minimize, and Mitigate for Impacts on Bats.* • Implement Mitigation Measure BR-1a (Construction Best Management Practices). ▪ Native bats shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • A qualified biologist shall conduct a preconstruction habitat assessment for potential communal bat roosts within the solar development area and a 300-foot buffer to the solar development area, ideally one year in advance of, but 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., hollows in trees, bridges), 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	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		within a 300-foot buffer around the potential roost sites. 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, as relevant. • A Bat Protection Plan (BPP) shall be prepared and implemented for approval by CDFW and USFWS prior to construction. The intent of the BPP is to reduce/eliminate impacts to native bat species during construction, operations, and maintenance. A BPP is often prepared in combination with an APP for solar facilities (see Mitigation Measure BR-1k, for Birds), referred to as an ABPP. The BPP (or ABPP, if combined) shall include the following elements: ▪ A description of conditions for bat species present in and near the solar development area, including results of site-specific surveys. ▪ An assessment of potential risks of project construction, operation, and maintenance on 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 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 bat species.	
	PS	*BR-1m: Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee.* • Implement Mitigation Measure BR-1a (Construction Best Management Practices). ▪ Crotch's bumble bee shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • Prior to construction, a qualified biologist shall conduct (1) a habitat assessment and (2) focused surveys to detect foraging Crotch's	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		bumble bees and potential nesting sites, that are consistent with CDFW's Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species (CDFW's Survey Considerations) (CDFW, dated June 6, 2023 or more current CDFW guidelines if available), in potential suitable habitat prior to construction (i.e., ground disturbing activities) within the solar development area during the peak Colony Active period (i.e., approximately April through September) when floral resources are present, ideally during the peak bloom. The habitat assessment shall include historical and current species occurrences; document potential habitat on site including foraging, nesting, and/or overwintering resources; and quantify which plant species are in bloom and their percent cover, and other items described in CDFW's Survey Considerations. Focused surveys for foraging bees and nesting sites shall be conducted on 3 separate occasions spaced 2-4 weeks apart during the Colony Active Period, in accordance with details specified in CDFW's Survey Considerations. Only individuals with appropriate handling authorizations shall be allowed to capture or handle bumble bees. Because bumble bees move their nests every year, focused surveys shall be conducted prior to project activities resulting from potential ground and vegetation disturbance in each year construction activities occur. • Consistent with CDFW's Survey Considerations, if no Crotch's bumble bees are found during focused surveys, but the habitat assessment identified suitable nesting, foraging, or overwintering habitat within the solar development area, it is recommended that a biological monitor be on-site during vegetation or ground disturbing activities that take place during any of the Queen and Gyne Flight Period and Colony Active Period. • If Crotch's bumble bee is detected, the qualified biologist shall notify CDFW, and survey data shall be submitted to CDFW via a written report and also via CNDDB. The written survey report will be submitted to CDFW within 30 days of the pre-construction survey. The report will include survey methods, weather conditions, and survey results, including a list of insect species observed and a figure showing the locations of any Crotch's bumble bee nest sites	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		or individuals observed. If nests are observed, the survey report will also include the qualifications/resumes of the surveyor and qualified biologists for identification of photo vouchers, detailed habitat assessment, photo vouchers, and recommendations for avoidance. In addition, if Crotch's bumble bee is detected in the solar development area, then a site-specific Crotch's Bumble Bee Avoidance and Minimization Plan shall be prepared and implemented in coordination with CDFW to avoid take, or consult with CDFW to obtain an Incidental Take Permit (ITP) if take of Crotch's bumble bees may occur during project activities. The plan shall include a description of on-site habitat, potential nest and overwintering sites present, recommendations for avoidance and minimization (such as active nest avoidance buffers). If an ITP is sought, mitigation for the loss of potential nest sites will be fulfilled at a minimum 1:1 nesting habitat replacement of equal or better functions and values to those impacted by the project, and may include measures 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 and/or ITP shall be implemented during project activities.	
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	*BR-2: Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities.* • Implement Mitigation Measure BR-1a (Construction BMPs). ▪ Riparian habitat and other sensitive natural communities shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a. • Implement Mitigation Measure BR-1f (Swainson's Hawk). • Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands and Other Waters). • Implement Valley Needlegrass Grassland Protection Measures as follows:	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ A qualified biologist shall conduct a preconstruction survey in advance of ground disturbing activities and vegetation removal occurring in areas with potential for this sensitive community type, to map any occurrences of Valley needlegrass grassland within the solar development area. Surveys shall be conducted at an appropriate time of year for detection of purple needlegrass (*Stipa [Nassella] pulchra*). ▪ If mapped occurrences of Valley Needlegrass Grassland are identified within the solar development area impact footprint, prior to project implementation, project designs shall be refined within the solar development area boundaries (e.g., location, orientation, and shape of solar arrays; perimeter fence alignment; location of pole risers supporting medium voltage electrical lines) to avoid and/or minimize potential impacts on mapped areas of this sensitive natural community to the maximum extent feasible without increasing impacts on other resources. Areas to be avoided will be fenced off or otherwise identified (e.g., with flagging, on site plan maps) for avoidance and a qualified biologist will be present to monitor all construction work activities within 100 feet from identified avoidance areas to ensure no unauthorized impacts occur. ▪ If mapped occurrences of Valley Needlegrass Grassland are identified within the solar development area impact footprint and cannot be avoided, incorporate specific restoration and management prescriptions consistent with the long-term preservation of Valley Needlegrass Grassland occurrences on-site into the Agricultural Management Plan to be implemented as part of Mitigation Measure AG-1 (see Chapter 4, “Agricultural Resources”). This could include specific prescriptions such as plant or topsoil salvage for replacement after ground disturbing activities, incorporating purple needlegrass (Stipa pulchra) and other associated species seed into the restoration seed mix in areas where Valley Needlegrass grassland have been impacted by the project, mowing after seed set of purple needlegrass, prohibiting ground-disturbing operational activities in these areas, restricting operational activities to “drive and crush.” A monitoring	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		and adaptive management approach shall also be identified for implementation throughout the operational life of the project (including the first year post-construction and every five years on average thereafter) to confirm re-establishment and continued occupancy of the solar development area by Valley Needlegrass Grassland throughout the operational live of the project, at a performance standard of no net loss of mapped occurrences of this community type within the solar development area. • Implement Oak Woodland and Native Tree Mitigation, as follows: ▪ The project applicant shall mitigate for impacts to oak woodlands (i.e., oak canopy loss), and for the loss of native oaks and other native trees species (i.e., native tree removal) by implementing the following three mitigation components: 1) avoidance and minimization of native trees retained within and adjacent to the solar development area, 2) preservation of oak woodlands at a 1:1 preservation to impact ratio of native oak tree canopy area lost, and 3) in-kind establishment plantings of native trees at a 1:1 tree replacement ratio, as further detailed below, and as described in a Tree Resource Mitigation Plan developed by the project applicant and subject to approval by Sacramento County prior to issuance of a grading permit. 1) Avoidance and Minimization: ▪ Retain and protect native trees within the solar development area that would not conflict with construction or operational activities of the project, as determined by a qualified arborist upon review of final construction drawings in collaboration with the project applicant. Retained and protected trees could include those located within identified exclusion zones or in temporary work areas outside of the facility fenceline (e.g., along the gen-tie and within earthwork limits). ○ Identify root protection zones (at a minimum inclusive of the tree dripline) for all native trees to be retained and protected within the solar development area. Root protection zones shall be clearly identified on final construction drawings. Temporary orange construction fencing or a similar protective barrier shall	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		be installed one foot outside the root protection zones of retained native trees prior to initiating project construction. To the maximum extent feasible, soil disturbance (e.g., scraping, grading, trenching, excavation) is to be avoided within root protection zones. If work is necessary within identified root protection zones, a qualified arborist shall provide specifications for this work such as methods for root pruning, backfilling specifications, and irrigation management guidelines. ▪ For native trees identified to be retained and protected within the solar development area (see above), retain a qualified arborist who shall: o Clearly designate an area within the solar development area that is outside the root protection zones of all trees where construction materials may be stored/stockpiled and where vehicle and equipment parking can take place. No materials storage/stockpiling or parking shall take place within the root protection zones of retained trees. o Establish specifications for care of the retained trees within the solar development area. Implement recommended tree care or oversee the implementation of tree care if conducted by a construction contractor, and develop and implement a tree inspection schedule to ensure tree health is being maintained throughout the construction period and for one year post construction. Tree care specifications may be adjusted by the qualified arborist as needed to provide optimal tree health as a result of inspections. Potential tree care performance standards shall at minimum include: o Prior to any grading or other work within 50 feet of any tree to be retained, a qualified arborist shall determine whether irrigation needs to be installed from April through September and/or placement of a 4- to 6-inch layer of chip mulch over the root protection zone of any trees is required to minimize potential for impact.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		○ All work to be performed inside the root protection zone shall have fencing (i.e., exclusion fencing) installed at the edge of construction in accordance with recommendations of a qualified arborist; the exclusion fencing shall be inspected by the qualified arborist prior to grading and/or grubbing to ensure it is functional; any fence deficiencies shall be corrected before associated work activities may begin. ○ The qualified arborist shall supervise any recommended clearance pruning, irrigation, fertilization, and placement of mulch and/or chemical treatments. Chemical treatments shall not occur without authorization by the qualified arborist. ○ Trenching inside the root protection zone, if necessary, shall be by a hydraulic or air spade, placing pipes underneath the roots, or boring deeper trenches underneath the roots. ○ Clearance pruning, if necessary, shall include removal of all the lower foliage that may interfere with equipment prior to having grading or other equipment on-site. A qualified arborist shall approve the extent of foliage removal in accordance with ANSI A300 standards and oversee the pruning to be performed by a contractor. • Grading beneath trees to be retained shall be given special attention. A qualified arborist shall identify actions to avoid creating conditions adverse to any retained tree's health. The natural ground within the root protection zones of retained/protected trees shall remain undisturbed as determined by a qualified arborist to increase the likelihood of survival of the retained/protected trees. Grading within the root protection zones of native trees shall not be permitted unless specifically authorized by Sacramento County. • No grade cuts greater than one foot shall occur within the root protection zones of native trees to be retained, and no grade cuts whatsoever shall occur within five feet of their trunks. ○ Major roots two inches or greater in diameter encountered within any retained tree's root protection zone during excavation shall not be cut and shall be kept moist and covered with earth as soon as possible.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		○ Roots one inch to two inches in diameter encountered within any retained tree's root protection zone during excavation that are severed shall be trimmed and treated with pruning compound and covered with earth as soon as possible. ○ Support roots encountered within any retained tree's root protection zone during excavation shall be protected. A qualified arborist shall be required to hand-dig in the vicinity of retained trees to prevent root cutting and mangling that may be caused by heavy equipment. ○ All stumps within the root protection zone of trees to be retained shall be ground out using a stump router or left in place. No trunk within the root protection zone of retained trees shall be removed using a backhoe or other piece of grading equipment. ▪ No fill greater than one foot shall be placed within the root protection zones of native trees to be preserved and no fill whatsoever shall be placed within five feet of their trunks. Fill material shall not be placed in such a manner that encases the tree. Surface water drainage must be able to move away from the tree. ▪ No irrigation system shall be installed within the root protection zones of native tree(s) to be retained that may be detrimental to the preservation of the native tree(s) unless specifically authorized by Sacramento County. 2) Oak Preservation: ▪ Consistent with Sacramento County Policy CO-140, compensation for the unavoidable loss of native oak tree canopy area as a result of project construction shall be provided by the project applicant to achieve a performance standard of no net loss, defined as a minimum 1:1 preservation to impact ratio of native oak tree canopy area lost, through one or more of the following options. The removal of, and compensation for native oak tree canopy area shall be quantified in the Tree Resource Mitigation Plan, subject to Sacramento County review and approval:	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ On-site preservation of native oak tree canopy shall be considered as a first priority for fulfillment of this preservation mitigation requirement. For the purposes of this mitigation measure, "on-site" constitutes being within Adjacent Other Lands (Plate PD-2, Project Setting) of the project site, or immediately adjacent to the project site such that at least a portion of the boundary of the preservation area directly borders oak woodlands in the project site. On-site native oak tree canopy preservation shall preserve the main, central portions of consolidated and isolated groves constituting the existing canopy on-site, and provide an area on-site that compensates for canopy area lost. On-site preservation areas shall prioritize areas that provide connectivity between existing oak woodlands and forest and/or riparian habitat that may serve as potential wildlife movement corridors. The native oak canopy preservation area must be a single contiguous area on-site, adjacent to existing oak canopy to ensure opportunities for regeneration, and at least equal to the size of canopy area lost or else additional compensation as described below (i.e., off-site preservation, preservation bank credit purchase, or in-lieu fee to a tree preservation fund) shall be required to ensure no net loss. ▪ If on-site mitigation does not achieve the no net loss performance standard, off-site preservation may be considered in entirety or in combination with on-site preservation. The off-site preservation area shall meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity. Protected woodland habitat could be used as a suitable site for establishment tree plantings (see 3, Establishment, below), if appropriate and approved by Sacramento County. o Be equal or greater in area to the total area that is included within a radius of 30 feet of the root protection zone of all trees to be removed; o Be adjacent to a protected stream corridor or other preserved natural areas; o Support a significant number of native broadleaf trees;	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		○ Offer good potential for continued regeneration of an integrated woodland community; ○ Be located within the boundaries of Sacramento County; and ○ Be within parcels immediately adjacent to and surrounding the project site parcels such that the boundary of the off-site preservation parcel(s) share a boundary, at least in part, with the project site parcel boundaries. If preservation of adjacent parcels is not feasible, then preservation shall be within mapped areas of Savannah and Blue Oak Woodland on the Habitat Component map of the Open Space Vision Diagram included in the Sacramento County General Plan. ▪ A combination of on-site or off-site preservation, as described above. ▪ Oak tree canopy area lost shall be calculated as the total collective area of contiguous canopy cover representing the downward projection of the crown or crowns of overlapping adjacent tree canopies (i.e., outer extent of leaves and small twigs) for all native oak trees to be removed according to the County-approved final project designs. Oak tree canopy area shall be calculated using a consistent method for determining canopy area impacts as for identifying a suitable mitigation area and may be calculated as described in the Arborist Report Coyote Creek Agrivoltaic Ranch Project, dated August 2023 (Dudek 2023). At the time of preparation of this environmental impact report, a total of 54.61 acres of native oak tree canopy area was estimated to be permanently lost and an equal amount would be required for preservation as described in this mitigation measure. ▪ If neither on-site nor off-site preservation is sufficient to achieve the no net loss performance standard, or if the full preservation mitigation requirement cannot be accomplished with on-site and off-site preservation alone, the project applicant shall fulfill any remaining preservation mitigation requirement through either: ○ a preservation bank credit purchase for an equivalent oak canopy area of blue oak woodland, or	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		○ a sum equivalent to the replacement cost for all unmitigated trees within the solar development area shall be paid by the project applicant as an "in-lieu fee" to the County's Tree Preservation Fund or another appropriate tree preservation fund (e.g., Sacramento Valley Conservancy). The total amount to be paid shall be based on the current cost per inch in DBH inch for all trees to be mitigated and shall be approved by Sacramento County. ▪ Any on- and/or off-site preservation lands used or acquired to fulfill this compensatory mitigation requirement shall include legal protections for protection into perpetuity (e.g., conservation easement, restrictive covenant, or other Sacramento County-approved mechanism). In addition, the project applicant shall provide funding for (1) acquisition in fee title or any legal protections of the preservation lands, (2) initial habitat improvements (if needed), (3) long-term habitat maintenance and management of the preservation lands in perpetuity, and (4) preparation of a Preserve Management Plan that describes the preserved oak canopy resources on-site, responsible parties, management goals and objectives, management activities, and reporting requirements. The responsibilities for acquisition and management of the preservation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the County. Funding for on- and/or off-site preservation lands shall be estimated through preparation of a Property Analysis Record (PAR), or PAR-Equivalent Analysis, which is an itemized cost estimate of the initial and capital period costs and annual, ongoing costs of in-perpetuity land management. ▪ Preservation as described in this measure either through on-site or off-site means, a preservation bank credit purchase, in-lieu fee, or a combination thereof representing the full mitigation requirement as identified in this mitigation measure shall be completed within 24 months from the start of project-related tree removal activities; any extension must be approved by	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Sacramento County. If preservation is not completed prior to the start of tree removal activities, the project applicant shall provide financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, initial improvements (if needed), and long-term maintenance and management of preservation lands and/or to cover any additional mitigation options (e.g., bank credit purchase, in-lieu fees). Financial assurance shall be provided to Sacramento County prior to the issuance of a grading permit and can be provided in the form of irrevocable letter of credit, bond, a pledged savings account, or another form of security as approved by the County. The total amount of financial assurances shall be determined by an updated appraisal and PAR or PAR-Equivalent Analysis as described above. 3) Additional Establishment and Enhancement: ▪ In addition to the first two steps of this three-part mitigation measure described above, the effects of the removal of oak trees shall be further mitigated and compensated for by the project applicant through establishment and enhancement of oak trees and native trees other than oaks. ▪ In consideration of the Sacramento County General Plan Policies CO-139 and CO-140, compensation for the loss of native oak trees, and native trees other than oaks, that are greater than 6 inches DBH shall be provided by the project applicant through in-kind establishment plantings of native tree species with a minimum performance standard of a 1:1 tree replacement ratio of surviving trees3 at 7 years after replacement (i.e., planting) to those removed/lost. The removal of, and compensation for native trees shall be quantified in the Tree Resource Mitigation Plan, subject to Sacramento County review and approval. ▪ The establishment planting area shall be described in the Tree Resource Mitigation Plan, including rationale demonstrating the	

[3] A surviving tree is any tree determined to be alive and with a health rating of fair or better, as assessed by a qualified arborist.

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		value of the establishment planting area to oak woodlands conservation in Sacramento County and the region (e.g., wildlife movement corridor) and the characteristics that make the planting area well suited for successful establishment. The establishment planting area shall, at minimum, meet the following listed criteria: ○ be suitable for tree planting – in particular for native tree and oak species targeted for mitigation (consistent with Sacramento General Plan Policy CO-133), ○ be large enough to accommodate the planned establishment plantings, ○ be located within the boundaries of Sacramento County, ○ be within parcels immediately adjacent to, and surrounding project site parcels such that the boundary of the off-site preservation parcel(s) share a boundary, at least in part, with the project site parcel boundaries. If preservation of adjacent parcels is not feasible, then preservation shall be within mapped areas of Savannah and Blue Oak Woodland on the Habitat Component map of the Open Space Vision Diagram included in the Sacramento County General Plan or in areas which support the appropriate soil characteristics to support oak woodland growth and regeneration, and ○ Mitigation tree plantings within the establishment planting area shall not: • conflict with current or planned land uses, • require removal of existing natural habitats to accommodate establishment plantings (although removal of dead trees to facilitate plantings that serve to promote stand recruitment may occur), • create unnatural canopy closure that would reduce wildlife value or contribute to increased fire hazard. ▪ Establishment plantings shall be accomplished by any of the following approaches, or a combination thereof, and to be	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		detailed in a Sacramento County-approved Tree Resource Mitigation Plan. ○ Stand infill plantings within on-site or off-site preservation areas serving as compensation for oak tree canopy area lost (see #1, Preservation, above). This could include actions such as replacing dead/dying trees or providing additional understory recruitment at natural densities in an otherwise healthy stand. ○ Restoration focused plantings on new lands acquired in fee title or for which an easement is obtained that historically supported but current lack presence of trees/woodland habitat in all or some areas that would be targeted for large-scale establishment plantings. ○ Funding one or more tree planting projects in partnership with a local conservancy or existing preserve that would at minimum meet the required establishment performance standard. An example includes providing mitigation funding for blue oak woodland regeneration projects in Deer Creek Hills Preserve as identified in the Deer Creek Hills Preserve Master Plan. ○ Any combination of above. ○ Establishment plantings shall be accomplished through one or more of the following methods, to be detailed in the Tree Resource Mitigation Plan: 1) for oak trees, acorn plantings, shall be completed by collecting acorns from on-site or nearby locations off-site (i.e., local sources) in accordance with published guidance specific to blue oak acorn regeneration (McCreary 2001; UC Oak 2024), 2) for native trees, container tree plantings may be used for establishment plantings. ▪ This mitigation measure does not preclude over-planting such that the minimum performance standard (see above) shall be accomplished at the end of the 7-year maintenance and monitoring period. ▪ Establishment planting plans shall be developed by a qualified oak restoration specialist and detailed in the Tree Resource	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Mitigation Plan to be reviewed and approved by Sacramento County. Establishment planting plans shall address, at minimum, the following: o project-related impact on native tree resources, including oak trees and riparian trees. o establishment planting goals and performance standards (i.e., success criteria), including interim performance targets for evaluating progress towards success criteria. o suitability of the site for proposed tree plantings demonstrated with soil information, aerial photography, and/or other resources. o for native oak tree plantings, provide information on acorn collection, storage, planting methods, and planting schedule; for native tree plantings, other than for oak trees, provide information on tree container sizes targeted for planting, planting methods, and planting schedule o planting densities per species based on plant material type (e.g., acorn, size of tree container), accepted practice, current research, site-specific conditions, establishment goals, performance standards, and the recommendations of a qualified arborist. o consistency with accepted native tree planting standards, including those for oak trees outlined in Regenerating Rangeland Oaks in California (McCreary 2009), How to Grow California Oaks (McCreary 1995), How to Collect, Store and Plant Acorns (McCreary undated), and other applicable publications and protocols that may be established by the University of California, Division of Agriculture and Natural Resources. o maintenance (e.g., weed control/pest management, fertilization, tree/seedling protection, or other best management practices, etc.), monitoring, and reporting requirements and schedules to ensure performance targets are being met throughout the 7-year establishment period, calculated from the day of planting. At minimum, performance monitoring and	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		reporting shall be required annually for 3 years post-planting and at the end of years 5 and 7. ○ contingencies (i.e., adaptive management) if interim performance targets or success criteria at the end of the 7-year monitoring term are not met, such as additional or replacement plantings or payment of an "in lieu" fee similar to that described under 2-Preservation, above, based on the current cost per DBH inch4 set by the County that remains unmitigated by the end of the 7-year monitoring term. ▪ Any on- and/or off-site mitigation lands used or acquired to fulfill this establishment mitigation requirement shall include legal protections for protection in perpetuity, including restrictions on land use (if necessary) to ensure compatibility with long term goals for tree establishment (e.g., conservation easement, restrictive covenant, or other Sacramento County-approved mechanism). In addition, the project applicant shall provide funding for 1) acquisition in fee title or any legal protections of mitigation lands, 2) establishment plantings necessary to meet performance standards, 3) long-term habitat maintenance and management of mitigation lands in perpetuity, and 4) preparation of a Preserve Management Plan that describes the mitigated tree resources established on-site, responsible parties, management goals and objectives, management activities, and reporting requirements. The responsibilities for acquisition and management of the mitigation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the County. Funding for mitigation lands shall be estimated through preparation of a PAR, or PAR-Equivalent Analysis, which is an itemized cost estimate of the	

[4] One inch DBH is equivalent to one seedling.

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		initial and capital period costs and annual, ongoing costs of in-perpetuity land management. ▪ Establishment planting representing the full mitigation requirement as identified in this above mitigation measure shall be completed within 24 months from the start of project-related tree removal activities; any extension must be approved by Sacramento County. If establishment planting is not completed prior to the start of tree removal activities, the project applicant shall provide financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, establishment plantings, and long-term maintenance and management of mitigation lands and/or to cover any additional mitigation options (e.g., contingency plantings, in lieu fees). Financial assurance shall be provided to Sacramento County prior to the start of tree removal activities and can be provided in the form of irrevocable letter of credit, bond, a pledged savings account, or another form of security as approved by the County. The total amount of financial assurances shall be determined by an updated appraisal and PAR or PAR-Equivalent Analysis as described above.	
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: SAvoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan.* • Implement standard construction BMPs provided in Mitigation Measure BR-1a, in particular Construction Fencing, Erosion Control, Equipment Storage and Fueling, Dust Control, Soil Compaction, and Revegetation to protect adjacent wetlands and other waters from unauthorized encroachment and/or impacts outside the solar development area. ▪ Jurisdictional aquatic resources shall be included in the WEAP discussed under “Training of Construction Staff” in Mitigation Measure BR-1a. • Prior to project implementation, project designs shall be refined within the solar development area boundaries (e.g., location,	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		orientation, and shape of solar arrays; perimeter fence alignment; location of pole risers supporting medium voltage electrical lines) to avoid and/or minimize potential impacts on State and federally-protected wetlands and other waters, including riparian habitat, and to maintain hydrological and biological connectivity through the solar development area without increasing impacts on other resources. • If the final approved project does not avoid all State and federally-protected wetlands and other waters (including riparian habitat), 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 solar development area. ▪ Restricting unavoidable temporary construction and maintenance activities within wetlands/other waters (e.g., driving	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		vehicles/equipment through jurisdictional aquatic resources) to occur during the dry season or dewatered areas that have been dry for a minimum of 15 days, 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 for the purposes other than vegetation maintenance. ▪ Restricting use of heavy equipment within wetlands/other waters within the permanent construction footprint to occur under dry conditions (e.g., during dry season or so as not to form ruts of 6 inches or more) or dewatered areas. ▪ Delineation of the work site boundaries such that no work occurs outside the defined impact footprint of the solar development area. ▪ Hardpan/Duripan Protection: to protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to result in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer once construction is complete. ▪ Restoring all temporary impacts to wetlands to pre-existing conditions. ▪ Establishing wetland avoidance buffers to the maximum extent feasible (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	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		properly implemented to protect sensitive aquatic resources and that no un-authorized impacts occur. • Compensation shall be provided for project-related residual impacts (i.e., impacts after taking into account reductions in impact by mitigation measures) 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 (such as within Adjacent Other Lands within the Barton Ranch property, or other areas within the same watershed as the solar development area), 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 solar development area provide habitat to special-status species (e.g., 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.	
Impact BR-4: Interfere Substantially with the Movement of Any Native Resident or Migratory Fish or Wildlife Species or with	PS	*Implement Mitigation Measure AG-1 (see Chapter 4, "Agricultural Resources").*	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites			
	PS	*Implement Mitigation Measure BR-1e (Burrowing Owl).*	LTSM
	PS	*Implement Mitigation Measure BR-1f (Swainson's Hawk).*	LTSM
	PS	*Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands and Other Waters).*	LTSM
Impact BR-5: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, such as a Tree Preservation Policy or Ordinance	PS	*BR-5: Address Inconsistencies with Local Policies Protecting Biological Resources.* • A minimum buffer of 100 feet shall be maintained from the top of bank of Carson Creek and Coyote Creek to protect riparian functions consistent with the Sacramento County General Plan Policy CO-115, unless a Qualified Biologist determines that a buffer of less than 100 feet will sufficiently protect riparian habitat functions. If work is planned within this 100-foot avoidance buffer, then a site-specific Aquatic and/or Riparian Resource Avoidance Plan shall be developed and implemented that includes the following: ▪ Flagging or fencing aquatic features under the oversight of a Qualified Biologist for avoidance and to clearly identify the limits of construction. ▪ All crews will be provided with maps showing the locations of aquatic habitats in and near the work area. ▪ Measures to minimize erosion and runoff, or altered surface flow during construction and ongoing operations, in accordance with Mitigation Measure BR-1a (in particular Erosion Control); and implementation of BMPs and pollutant source control measures, along with preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants as identified in Impact HYD-1 (see Chapter 10, "Hydrology and Water Quality"). ▪ Worker environmental awareness training (see Mitigation Measure BIO-1b) covering relevant laws, location(s) of wetlands	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		and other waters, including riparian habitat in the work site, and project activity-specific avoidance and minimization measures.	
Impact BR-6: Conflict with the Provisions of an Adopted HCP, Natural Community Conservation Plan, or other approved Local, Regional, or State HCP	LTS	No mitigation is required.	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 by: • Minimizing 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 CCR]). Provide clear signage that posts this requirement for workers at the entrances to the site. • Maintaining 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. • Training equipment operators in proper use of equipment. • Using the proper size of equipment for the job. • Using 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.	Less than Cumulatively Considerable

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ 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
Impact CR-2: Cause a Substantial Adverse Change in The Significance of an Archaeological Resource Pursuant to Section 15064.5	PS	*CR-2a. Cultural Resource Management Plan (CRMP).* In order to mitigate impacts to known archaeological resources and those resources that may inadvertently be encountered during construction-related activities, a Cultural Resource Management Plan (CRMP) shall be prepared and implemented. The CRMP shall be reviewed by the County and finalized prior to construction permit issuance. The CRMP shall, at a minimum, include the following components: Recorded sites with precontact indigenous components within the project site shall be avoided by project design. Specific avoidance buffers and management strategies pertaining to	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		precontact indigenous resources shall be addressed in the *Tribal Cultural Resources Avoidance and Minimization Plan* (TCR AMP). The CRMP and TCR AMP shall act as a pre-construction record of the recorded boundaries of these resources and ensure compliance with regulatory requirements pertaining to both precontact indigenous resources and/or TCRs. Definition of environmentally sensitive area (ESA) and methods of delineation (e.g., exclusion fencing, signage, definition on project design drawings) to ensure that both precontact and unevaluated historic-era sites outside of the solar development area remain undisturbed. ESAs will be established around all precontact and historic-era archaeological resources, including an appropriate buffer, adjacent to the solar development area and must be physically delineated prior to construction. The ESAs shall be clearly delineated and marked using methods that do not conflict with other resource or construction styles. The ESAs shall not detail the cultural nature of that avoidance area on signage or plans. The ESAs shall be maintained through the duration of construction. Construction monitoring protocol (*see Mitigation Measure CR-2b, below*). To the extent construction activities uncover previously unknown or unanticipated cultural resources, all such activities will stop in the vicinity of the resource until the significance of the resources is determined. An appropriate buffer for avoidance during construction is typically 100 feet, which may be adjusted at the recommendation of a qualified archaeologist meeting Secretary of the Interior Qualifications, so that the exclusion buffer allows key areas of construction to proceed while ensuring that no ongoing project activities will affect the find. Where complete avoidance is determined infeasible, archaeological resources shall be evaluated for eligibility to the CRHR by a qualified archaeologist.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Research questions relevant to the evaluation of anticipated resource types within the project area, and a research design for the evaluation of such resources. Historic-era mining-related archaeological resources may retain physical Criterion 3 and Criterion 4 values that require detailed mapping and documentation prior to any disturbance. This will require field documentation, updating DPR forms, and preparation of an additional technical report. In addition, if impacted, stacked rock features, also described as "residential features," shall be disassembled and excavated to inspect these features for possible chronological indicators of the specific mining period, since they may be contributors to the CRHR-eligible Walltown Historic Mining District. Evaluation of precontact archaeological resources and historic-era archaeological sites with artifact deposits and/or domestic-type features will likely require an archaeological testing phase that consists of systematic excavations of a portion of the site within the solar development area to determine the integrity of the archaeological deposits, the horizontal and vertical extent of the deposits, the quantity and diversity of artifacts contained within the deposits (as they relate to the ability to answer potential research questions), and the potential for human remains. The qualified archaeologist shall assess if the archaeological site qualifies as a significant or unique archaeological resource under the criteria of CEQA Guidelines Section 15064.5, in consultation with the lead agency, who may request review by consulting tribes and a Tribal Archaeologist based on requirements of the TCR AMP, as dependent on the age and/or association of the identified cultural resource. 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; or if total avoidance is not feasible (2) 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 Guidelines Section	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		15126.4(b) for managing unanticipated discoveries have been met. When data recovery through excavation is selected as the appropriate mitigation measure, a data recovery plan, which makes provision for recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Define the requirements for communication and notification to the lead agency and consulting parties, daily monitoring log preparation, and final construction monitoring report. The final monitoring report shall be submitted to the lead agency, consulting tribes, and NCIC.	
	PS	*CR-2b. Construction Monitoring.* Prior to the start of ground-disturbing activities, and with any changes in personnel, work crews shall receive an archaeological awareness training notifying them of the archaeologically sensitive nature of the project site, focusing on common artifact/feature types, stop-work protocol, and notification protocol in the event of a potential unanticipated discovery. A qualified archaeologist shall monitor initial grading, subsurface disturbances as outlined by the CRMP. If unanticipated cultural resources are encountered during construction, the process outlined by the final CRMP shall be followed. No additional action is required with regard to previously recorded historic-era resources within the solar development area. These areas shall be observed by an archaeological monitor during initial disturbance by construction to ensure that no additional features or unidentified deposits are encountered. In the event that newly recorded features or deposits are encountered within these areas, equipment shall be redirected while these areas are further inspected by the archaeologist. These elements shall be subject to recordation sufficient to capture their physical data potential and to inform updates to the records of these features. Information shall be captured through field methods of recordation meeting standards applied during inventory/evaluation technical studies completed for the project. If these findings do not introduce potentially significant information that	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		would revise the individual eligibility of this resource for NRHP/CRHR eligibility under Criteria D/4, construction may resume. Any newly identified potentially significant resource or contributing element to an existing site shall be subject to provisions provided for unanticipated discovery under Mitigation Measure CR-2a and as defined in the CRMP, including review for feasibility of avoidance and/or other management options such as data recovery, should this be required. The archaeological monitor shall monitor construction, prepare daily monitoring logs, report and assess inadvertent discoveries, communicate with on-site Native American monitors and contractors, guide installation and tracking maintenance of ESA marking, and ensure implementation of the CRMP and approved mitigation. The final CRMP shall act as a record of compliance with guiding documents and mitigation. Native American monitoring should be inclusive of those traditionally culturally affiliated tribes and related tribal cultural values expressed through the process of government-to-government consultation. If unanticipated cultural resources are encountered during construction, the process outlined by the final TCR AMP shall be followed.	
	PS	*CR-2c. Walltown Mining District Historic Study and Interpretive Plan.* A Historic Mining Study and Interpretive Plan shall be prepared and implemented. While the documentation may commence prior to or during construction, these elements may be prepared as separate documents or combined, and final drafts are anticipated post-construction, within one year of starting commercial operations on-site. The study component shall focus on providing in-depth research and documentation pertaining to the defining characteristics of Walltown Historic Mining District, specifically those elements that inform ethnicity and nineteenth-century regional mining history (NRHP/CRHR eligibility under Criteria A/1). The study shall address research themes related to placer mining and the social environment, technology, and lifeways of marginalized Chinese immigrant communities. It shall seek out and document how this group interacted with the Euro-American population. The study shall make an effort to contact and interview modern Chinese American descendent communities and/or pertinent	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		historical societies in the region and gain insights as to how these past activities may inform or otherwise interplay with community heritage values. The history of the Walltown Historic Mining District is a public community resource. As such, the Interpretive Plan shall provide methods for distilling, conveying, and sharing the information gathered in the Walltown Historic Mining District Study to the public. This should build on technical documentation prepared as part of this report and may take the form of a publicly accessible interpretive display, website, interactive map, or other options to be determined by the County. The project proponent shall fund the preparation of the Walltown Historic Mining District Study and Interpretive Plan and implementation of the decided interpretive method for conveying this information to the public.	
Impact CR-3: Disturb Any Human Remains, Including Those Interred Outside of Dedicated Cemeteries	PS	*CR-3a. Treatment of Human Remains.* If human remains are found during any project-related ground-disturbing activity, the remains shall be treated with appropriate dignity pursuant to the procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e). Project-specific requirements shall be included in the CRMP. Management of any human remains of Native American origin must occur in coordination and compliance with agreements and management strategies developed in consultation with traditionally culturally affiliated tribes, as outlined by the TCR AMP.	LTSM
	PS	*Implement Mitigation Measure CR-2a (Cultural Resource Management Plan [CRMP])*	LTSM
	PS	*Implement Mitigation Measure CR-2b (Construction Monitoring)*	LTSM
	PS	*Implement Mitigation Measure TCR-1 (Tribal Cultural Resource Avoidance and Minimization Plan).*	LTSM
Impact CR-4: Damage to or Destruction of Unique	PS	*CR-4. Avoid Impacts to Unique Paleontological Resources.* Prior to the start of earthmoving activities associated with the proposed substation, BESS, maintenance yard, solar panels, and all	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Paleontological Resources During Earthmoving Activities		proposed access roads south and east of the Prairie City SVRA, the project applicant shall do the following: 1. 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 and Sacramento County. 3. If paleontological resources are discovered during earthmoving activities, the project applicant shall retain a qualified paleontologist to evaluate the resource and prepare and implement 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 Sacramento County for review and approval. 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, Hazards and Hazardous Waste			
Impact HAZ-1: Routine Transport, Use, or Disposal of Hazardous Materials or Reasonably Foreseeable Upset and/or Accident Conditions Involving the Release of Hazardous Materials	PS	*Implement Mitigation Measure AQ-3 (Site Investigation for Potential Naturally Occurring Asbestos).*	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
	PS	*HAZ-1: Prepare an Emergency Response and Emergency Action Plan.* Prior to issuance of grading permits, the operator of the proposed facility shall coordinate with the appropriate local emergency management agencies, unified program agencies, and local first responders to develop an emergency response and emergency action plan. The plan must establish response procedures for an equipment malfunction or failure; include procedures that provide for the safety of surrounding residents, neighboring properties, emergency responders; and establish notification and communication procedures between the battery storage facility and local emergency management agencies. The plan shall be submitted to the County for review and approval.	LTSM
Impact HAZ-2: Hazards from Development on a Site Listed in California Government Code Section 65962.5 (Cortese List)	PS	*HAZ-2a: Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone.* *4.* No new project-related groundwater wells shall be installed within the 2,000-foot Consultation Zone established by County Municipal Code 6.28.000(G) adjacent to the boundary of the Aerojet contaminated groundwater plume. *5.* Existing groundwater wells within the project site that are within the 2,000-foot Consultation Zone shall not be used for project-related water supply.	LTSM
	PS	*HAZ-2b: Prepare and Implement a Health and Safety Plan.* To protect the health of construction workers and the environment, the project applicant or construction contractor(s) shall prepare and implement a Health and Safety Plan (HASP) as described below: • The HASP shall be prepared in accordance with State and federal OSHA regulations (29 CFR 1910.120) and approved by a certified industrial hygienist. Copies of the HASP shall be made available to construction workers for review during their orientation training and/or during regular health and safety meetings. The HASP shall identify potential hazards (including stained or odiferous soils at any location where earthmoving activities would occur), chemicals of concern (e.g., perchlorate, PCE, TCE, NDMA), personal protective	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		equipment and devices, decontamination procedures, the need for personal or area monitoring, and emergency response procedures. • The HASP shall also require notification of Aerojet, USEPA, and the Central Valley RWQCB if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater, or groundwater with a surface sheen) is encountered within the area underlain by the Aerojet groundwater plume or the vicinity of the White Rock Dump North. All excavation activities within 100 feet of encountering such soil or groundwater shall cease until consultation occurs with Aerojet and the appropriate regulatory agencies. • The HASP shall state that if previously undiscovered underground storage tanks related to ranch activities, or stained or odiferous soil or groundwater are encountered outside the areas of the Aerojet groundwater plume or the White Rock Dump North during construction activities, Sacramento County EMD shall be notified and the situation shall be remediated in accordance with Sacramento County EMD requirements. If directed by Sacramento County EMD, the project applicant shall retain a licensed environmental professional to conduct a Phase II ESA that includes appropriate soil and/or groundwater analysis. Recommendations contained in the Phase II ESA to address any contamination that is found shall be implemented before reinitiating ground-disturbing activities in these areas.	
	PS	*HAZ-2c: Coordinate with Aerojet to Close, Relocate, or Avoid Monitoring Wells.* During the project's design phase, the project applicant and its engineer(s) shall consult with Aerojet with oversight by Sacramento County to ensure that project-related facilities are placed far enough away from existing remediation and monitoring wells to avoid damage or destruction and to ensure that Aerojet retains appropriate access to the wells. If construction activities would occur within 100 feet of any existing remediation or monitoring wells, exclusionary fencing shall be placed around the wells prior to the start of construction activities. If avoidance of remediation or monitoring wells is infeasible, the project	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		applicant shall coordinate with Aerojet for the closure, relocation, or replacement of wells in a manner that complies with Aerojet remedial activities and monitoring plans. The locations of existing remediation and monitoring wells at the project site, and wells that are off-site but within 100 feet, shall be shown on the construction drawings and the construction contractor shall be informed of the locations of the wells with instructions to avoid them. If any remediation or monitoring wells are damaged during construction, the project applicant shall be responsible for paying for repairs, at the discretion of Aerojet.	
Impact HAZ-3: Airport Safety Hazards	LTS	No mitigation is required.	LTS
Impact HAZ-4: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	LTS	No mitigation is required.	LTS
Chapter 10, Hydrology and Water Quality			
Impact HYD-1: Violate Water Quality Standards or Substantially Degrade Surface or Groundwater Quality	LTS	No mitigation is required.	LTS
Impact HYD-2: Impede Sustainable Groundwater Management of the Basin by Substantially Decreasing Groundwater Supplies or Interfering with Groundwater Recharge	PS	*Implement Mitigation Measure HAZ-1a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone).*	LTSM
	PS	*HYD-2: Perform a Groundwater Hydrologic Study If On-site Groundwater Wells are Utilized for Project Construction and Decommissioning Activities.*	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Prior to the issuance of permits for grading, buildings, or improvement plans, the project applicant shall do the following: • Retain the services of an independent consultant specializing in groundwater hydrology to perform a groundwater hydrologic study. The groundwater study shall utilize hydrologic modeling to investigate whether the potential location of the proposed or existing groundwater well(s) and the amount of groundwater withdrawal that would be necessary to serve the proposed project would cause significant drawdown of the existing groundwater table such that existing groundwater wells would be adversely affected. The completed groundwater hydrologic study shall be submitted to the Sacramento County Department of Water Resources for review. • Demonstrate that appropriate permits have been obtained for a permanent source of on-site or off-site water supply that would not result in a localized drawdown of the groundwater table such that other existing nearby wells would be affected (including the potable water supply well at the Prairie City SVRA). If modeling determines that significant drawdown would occur for other water wells would be adversely affected, the project applicant shall not be permitted to install a groundwater well.	
Impact HYD-3: Substantially Alter Drainage Patterns or Add Impervious Surfaces That Would Result in Increased Erosion, Exceed Storm Drainage Systems, Substantially Degrade Water Quality, Result in Increased Flooding, or Impede or Redirect Flood Flows	PS	*HYD-3. Prepare a Project-specific Level 4 Drainage Study* Prior to obtaining a construction permit, the applicant shall prepare and submit a project-specific Level 4 Drainage Study to Sacramento County Department of Water Resources for approval. This study shall include all project components, including the switchyard components. Once approved, the applicant shall ensure that all measures are incorporated into project design and construction plans, as required by the Sacramento County Department of Water Resources.	LTSM
Impact HYD-4: Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan	PS	*Implement Mitigation Measure HAZ-1a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone).*	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
	PS	*Implement Mitigation Measure HYD-2 (Perform a Groundwater Hydrologic Study If On-site Groundwater Wells are Utilized for Project Construction and Decommissioning Activities).*	LTSM
Chapter 11, Land Use			
Impact LU-1: Consistency with Plans, Policies, and Regulations	LTS	No mitigation is required.	LTS
Chapter 12, Noise			
Impact NOI-1. Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise	PS	*NOI-1a. 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. • 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. • Blasting activities shall be prohibited within 0.5 miles of off-site noise sensitive receptors, and shall be limited to the hours between 7 a.m. and 8 p.m. Monday through Friday. • Construction equipment and equipment staging areas for equipment that generates noise levels of 70 dB or more at 50 feet shall be located as far as possible from nearby noise-sensitive receptors, shown in Plate NOI-2.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• 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 receptors 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.	
	PS	*NOI-1b. Prepare and Implement a Blasting Plan.* To minimize the noise and vibration impacts related to blasting activities, the applicant shall prepare a Blasting Plan for the proposed project for County review and approval that shall include the following information: • Public Communication: Notify all sensitive receptors within 0.5 miles of blast locations of the timing of planned blasting at least two weeks	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		in advance by mail, and include contact information with a daytime telephone number for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to reduce interior noise levels (e.g., closing windows and doors) shall also be included in the notification. • If blasting activities occur within 0.5 miles of the occupied residential property at 3850 Scott Road within the project site, the notification provided as part of this measure shall include the option to receive temporary relocation for the residents of this residential property for the duration of blasting activities within 0.5 miles of this receptor. • Blast Timing: Blasting shall be limited to the hours between 7 a.m. and 8 p.m. Monday through Friday. • Blast Design: Optimize blast design parameters, such as charge size, delay intervals, rock preconditioning, and stemming, to reduce peak noise levels. • Equipment Maintenance: Ensure all blasting equipment is well-maintained to prevent excessive noise from malfunctioning or inefficient machinery. • Blast Mats: Use blast mats to cover the blast area, reducing airborne noise and debris. • Noise Monitoring: Implement a noise monitoring program during blasting activities to ensure compliance with Chapter 6.68 of the County Code and apply additional sound-attenuating measures in real-time, if necessary. There are several real-time sound-attenuating measures that can be implemented, if noise monitoring during blasting activities indicates that noise levels exceed 55 dB at the property boundary of any noise-sensitive receptors. Some examples include: 1. Adjust Blast Timing: ○ Modify the Blasting Schedule: Adjust the timing of blasts to avoid sensitive times of the day (e.g., early morning, late evening, or during periods when wind direction favors noise propagation towards sensitive receptors).	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		○ Avoid Adverse Weather Conditions: Postpone blasts during temperature inversions and when wind speeds and directions could enhance noise propagation. 2. Use Additional Blast Mats or Heavy Tarps: ○ Cover the blast site with additional Blast Mats or Heavy Tarps to reduce airborne noise and control fly-rock. The mats act as a physical barrier, absorbing some of the noise energy produced during blasting. ○ Increase Matting Coverage: If monitoring shows high noise levels, add mats or reposition for better coverage. 3. Modify Blasting Techniques: ○ Reduce Charge Size: By reducing the charge size per delay, noise levels can be lowered. This may require splitting the blast into smaller, sequential blasts (using decked charges or micro-sequencing). ○ Stemming Optimization: Increasing the amount or using different types of stemming materials can help reduce noise from blast holes. High-density materials like gravel can be more effective at noise attenuation. 4. Install Temporary Noise Barriers: ○ Mobile Noise Barriers: Erect temporary noise barriers or screens (e.g., noise curtains, portable barriers) close to the blast area to block direct line-of-sight noise transmission to noise-sensitive receptors. ○ Use Acoustical Blankets: Wrap acoustical blankets around machinery or hang along barriers to further reduce noise transmission. 5. Real-time Monitoring, Communication, and Alerts: ○ Set up automated systems that send alerts if noise levels exceed thresholds, allowing the blast crew to make adjustments immediately. This may include delaying the blast or making on-site adjustments. 6. Modify Blast Design:	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		○ Change the Blast Geometry: Altering the angle, depth, or configuration of the blast holes can influence the direction of the energy release, potentially reducing noise. ○ Use Delayed Detonation Patterns: Using precise, millisecond delays between charges can help control the release of energy, reducing the peak noise levels. • Alternative Methods: Where feasible, explore the use of alternative rock excavation methods that generate less noise and vibration, such as hydraulic splitting or chemical expansion. • Post-Blast Reporting: Provide post-blast reports to the County, detailing the noise and vibration levels recorded, any exceedances of thresholds, and actions taken to mitigate impacts.	
Impact NOI-2. Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction	PS	*Implement Mitigation Measure NOI-1b: Prepare and Implement a Blasting Plan.*	LTSM
	PS	*NOI-2a: Implement Vibration Control Measures.* The construction contractor(s) shall implement the following measures to reduce construction- and decommissioning-generated noise and vibration: • The construction contractor/s shall use construction equipment that is as small as practicable, particularly pile drivers. • The construction contractor(s) shall prohibit the use of pile drivers within 250 feet of existing off-site structures. If pile driving is necessary within 250 feet of on-site structures where vibration levels exceed human annoyance thresholds or create undue disturbance, the option for temporary relocation shall be provided to affected residents at no cost during the duration of these activities. • The construction contractor(s) shall prohibit blasting and the use of pile drivers during nighttime (for blasting, these activities shall be limited to the hours between 7 a.m. and 8 p.m. Monday through	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Friday, and for pile driving, these activities 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) to avoid annoyance (refer to Mitigation Measure NOI-1a, above, for additional restrictions on blasting and pile driving activities). • The construction contractor(s) shall designate a "noise and vibration disturbance coordinator" who shall be responsible for responding to any local complaints about construction vibration. The disturbance coordinator shall determine the cause of any vibration complaint (e.g., human annoyance and structural damage) and require that reasonable measures be implemented to correct the problem. The disturbance coordinator's telephone number shall be posted at the construction site for the entirety of the construction and decommissioning periods.	
	PS	*NOI-2b: Additional Vibration Controls for Blasting to Avoid Human Annoyance.* • **Structural Damage:** Blasting activities shall not occur within 340 feet of the on-site structures. • **Human Annoyance:** Blasting activities shall not occur within 1,500 feet of occupied sensitive receptors unless mitigation measures are implemented to reduce vibration levels to less than 80 VdB. If blasting is conducted within 1,500 feet of occupied sensitive receptors, strategies shall be implemented, as needed, to achieve vibration levels below 80 VdB at occupied sensitive receptors, which may include: 1. Reduce Charge Weight o Reduce the maximum instantaneous charge (MIC) needs to be reduced. 2. Optimize Blasting Patterns o Use decking or delayed detonations to split the total charge into smaller sections. This strategy reduces the effective charge weight per delay and ensures compliance with vibration criteria. 3. Use Blast Mats	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		○ Place blast mats over the blasting area to absorb and diffuse some of the vibration energy. Blast mats can reduce PPV levels by 10 to 15 percent, allowing slight flexibility in MIC, if used. 4. Verify Compliance for Vibration Levels in VdB ○ To ensure vibration levels meet the human annoyance threshold of 80 VdB, additional mitigation measures, such as optimizing delays or using mats, or relocation of the occupants may be necessary to reduce levels further.	
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-*3.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 L50. 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 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.	LTSM
Chapter 13, 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

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
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-3. Prepare and Implement Traffic Control Plan.* To address potential traffic hazards during construction and decommissioning, 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. The 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, with a focus on safety for cyclists on Scott Road. In addition, the traffic control plan would provide for notification of emergency responders regarding the planned construction activities.	LTSM
Impact TC-4: Result in Inadequate Emergency Access	LTS	No mitigation is required.	LTS
Chapter 14, Tribal Cultural Resources			
Impact TCR-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	S	TCR-*1. Tribal Cultural Resource Avoidance and Minimization Plan.* In order to mitigate impacts to known TCRs and those resources that may inadvertently be encountered during construction-related activities, the applicant shall prepare a *Tribal Cultural* Resources *Avoidance and Minimization Plan* (TCR AMP). The TCR AMP shall be reviewed by the County and consulting tribes, and finalized and approved prior to construction. The TCR AMP shall, at a minimum, include specific guidelines and direction on the following components: **Pre-Construction Elements** <u>Avoidance and Preservation in Place.</u> The applicant shall demonstrate to the County's satisfaction that the 14 identified indigenous archaeological sites, plus a minimum 100-foot buffer around them (Environmentally Sensitive Areas [ESAs]), will be fenced prior to construction and shall be avoided during	SU

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		project construction. No project activity can occur within an ESA without County approval and a tribal monitor present. Prior to issuance of a grading permit, the applicant and the landowner shall jointly propose to the County for review and approval a measure to avoid impacts within the ESAs throughout the life of the project, including ongoing management responsibility of the ESAs throughout the life of the project. The ESA locations shall be noted on project construction and engineering plans as "Environmentally Sensitive Areas" and shall be fenced prior to commencement of construction activities (detailed below). In order to achieve preservation in place, it is important to confirm the boundaries of the ESAs in coordination with the consulting tribes and archaeologists. • Pre-Designation of Reburial Area. The applicant shall pre-identify a reburial location in consultation with culturally affiliated tribes, to serve as a reburial location in the event that tribal cultural resources are identified during ground-disturbing activities associated with project construction. The location pre-selected shall be recorded with a GPS device capable of sub-meter accuracy and be under the control of the property owner and in an area not planned for future disturbance. A copy of a map showing the reburial location and GPS-recorded shapefiles shall be filed with the County for proof of compliance and shall remain confidential. • Communication Protocols for Monitoring. The applicant shall develop a set of communication protocols, to the satisfaction of the County and tribes, to identify all points of contact and to ensure that tribes are notified when the applicant will proceed with authorized construction activities. Points of contact shall be established for the applicant, construction supervisor, monitoring tribes, project archaeologist, and County staff, and the cell phone numbers and email addresses must be documented and shared among all parties. Points of	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		contact are responsible for identifying backup representatives in the event they are unable to perform due to an absence or other reasons. **Construction-Period Elements** Reburial Lab Facility. The applicant or prime contractor shall provide one standard office-style construction trailer that is to be used exclusively by tribal monitors. In the event that there is a discovery of tribal cultural resources during construction, this trailer will be converted into a lab space for tribal monitors to prepare the materials in a culturally appropriate manner prior to reburying them. The lab facility shall remain until all ground disturbing activities have been completed and any tribal cultural resources have been reburied. Temporary Fencing. All ESAs shall be protected from incidental disturbances during construction activities by the placement of high visibility temporary exclusionary fencing. The fencing shall be installed under the direction of a tribal monitor and archaeological monitor (collectively, "Monitors") and shall remain intact throughout project construction. The Monitors will be responsible for periodic checks of the fencing, and any deficiencies reported to the contractor must be remedied before resumption of ground disturbing activities within 100 feet of the repair site. Worker Awareness Training. The County shall ensure that a worker awareness training program is developed in coordination with the Tribes and delivered to train the Contractor's equipment operators and the project's field consultants about tribal cultural resources and the requirements for avoidance and minimization. The County shall offer the opportunity to the consulting tribes to provide content for the training program. The training shall be given first to construction supervisors. The construction supervisors are responsible for ensuring that all workers that will operate ground-disturbing equipment receive this training prior to operating equipment that will disturb original ground. All trained workers will be required to receive a brochure and hardhat	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		sticker and sign a form indicating their understanding of the requirements and restrictions and copies of the forms shall be provided to the County as proof of compliance. Tribal Monitoring. All construction-related ground-disturbing activity shall be monitored by a qualified tribal monitor from a consulting tribe on this project to ensure that the procedures for unanticipated discoveries are addressed expeditiously and in accordance with the plan. The requirements for a monitor should be inclusive of all day and night construction activity that has the potential to result in ground disturbance. "Ground-disturbing activity" is defined as any activities that have the potential to disturb soil beyond that which was reasonably visible to tribal monitors and archaeologists during the pre-project pedestrian survey. This includes, but is not limited to, ground disturbing activities such as: grading; trenching; excavation for below-ground utility installation or foundation work; and any other below the ground activities. An adequate number of tribal monitors must be present to sufficiently cover multiple locations of ground disturbing activities. Tribal Monitors will have the authority to request a temporary and reasonable pause of ground-disturbing activities within 100 feet of a discovery of up to 30 minutes to safely and initially examine the ground more closely for indications of potential tribal cultural resources, without being impeded by construction equipment. In the event of the discovery of a potential tribal cultural resource, treatment plan protocol must be completed before resuming work at that location. • Response to Unanticipated Discoveries of Tribal Cultural Resources. If potential tribal cultural resources are encountered at the project site during construction, work shall be temporarily suspended within 100 feet of the find (based on the apparent distribution of cultural materials), and the construction Contractor shall immediately notify the County. Within two business days of the County receiving notification of an unanticipated discovery of a tribal cultural resource outside of the ESA, the County,	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		tribal monitors, and applicant shall perform a field visit to the location of the discovery and confer on the appropriate treatment of the resource. The applicant shall be afforded the opportunity to review the feasibility of avoidance and preservation in place. The County shall review available information and comments from the traditionally culturally affiliated tribes and determine if the resource meets the definition of a tribal cultural resource, as defined by Section 21074(a) of the Public Resources Code. If the County concludes on the basis of substantial evidence that the resource qualifies as a tribal cultural resource under Section 21074(a) of the Public Resources Code, the County shall require the project proponent to implement the following mitigation measure to comply with the standards in Public Resources Code section 21084.3 (1) preservation in place where feasible; (2) if preservation in place is not feasible, mitigation shall be undertaken pursuant to the TCR AMP. The County's determination of the presence of a tribal cultural resource should not be unreasonably withheld. If the discovery includes human remains, the procedures under Health and Safety Code Section 7050.5 or 7000 and, if applicable, Public Resources Code Section 5097.9 et seq. shall be carried out prior to any further action described below. The Contractor shall take protective measures to install temporary high-visibility fencing around the limits of the stop-work radius until consultation and treatment is completed in accordance with this mitigation measure and the AMP. Fence installation must be monitored by a tribal representative and shall include a sign indicating an Environmentally Sensitive Area. The Contractor may also use plywood sheets or metal plates to cover the exposure, in consultation with the tribal representative, in the event that the discovery must remain protected during non-working hours. The Contractor is responsible for ensuring that the security measures that are	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		taken to protect the entire construction site are extended to the location of the discovery as well. Additional boundary delineation may be necessary to understand the horizontal and vertical extent of the discovery outside of the ESA area. Selection of the appropriate method will be made by the applicant, in consultation with the parties participating in the consultation process described in this Plan. Options may include ground penetrating radar (including ground truthing of identified anomalies), geoarchaeological trenching, shovel testing or auguring, and/or controlled mechanical grading. Evaluation of the significance of identified tribal cultural resources is the responsibility of tribal monitors. Where such a resource includes archaeological components, the evaluation shall be a cooperative effort with the archaeologists, whereas the archaeologists will record and evaluate relative to NRHP/CRHR criteria, and tribal monitors evaluate relative to TCR criteria and provide their preferences on recovery, relocation, and/or repatriation. The consulting tribes will be invited to provide recommendations on culturally appropriate treatment to the County and the applicant. Avoidance and preservation in place are the preferred manner of mitigating impacts to cultural resources and tribal cultural resources. Discoveries of cultural resources that are determined not to meet the definition of a tribal cultural resource but that are determined to be otherwise historic resources under Public Resources Code section 5024.1(c) will be subject to the cultural resources mitigation measures which are documented separately in the environmental document. **Post-Construction Elements** <u>Repatriation of Tribal Cultural Resources.</u> Reburial methods will ensure that reasonable measures have been taken to prevent future disturbance. This may include a reburial process that will use a series of layered soil or materials that serve to	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		warn future excavators of the presence of repatriated materials, upon mutual agreement of the parties, and through consultation with the MLD, if one is designated by the NAHC. Culturally affiliated tribes shall be afforded the opportunity to prepare collected materials in a culturally appropriate manner prior to reburial. Reburial can occur at any time but must be completed no later than 30 days after the conclusion of construction. If the reburial does not occur within 30 days of the completion of construction because tribal monitors require additional time to prepare the materials for reburial in a culturally appropriate way, the County may authorize operation of the project prior to reburial. Recognizing the importance of culturally appropriate preparation of materials for reburial, the applicant shall provide funding for tribal repatriation specialists to prepare the materials. In addition, in the event human remains or cultural materials are reburied, in accordance with Section 5097.98(e) of the Public Resources Coe, the location of the reburial shall be recorded on a Department of Parks and Recreation (DPR) 523-Series Primary Record and Location Map and submitted to the California Historical Resources Information Center [5097.98(e)(1)], NAHC, and a reinternment record filed with the County [5097.98(e)(3)], within 30 days of the reburial. Recording of the location of reburial is required by state law (5097.98(e)] and is critical to ensuring that the reburial site is not inadvertently disturbed in the future. The reburial location will be documented on a DPR 523 series form and filed with the CHRIS and California NAHC within 30 days, unless tribe choose to rebury on tribal-owned land. • Restrictive Instrument for Preservation. The applicant recognizes that they hold a lease option over the entire project site, but the resulting project will impact a smaller footprint (the “solar development area”). It is anticipated that areas outside of the solar development area, including avoidance areas, of the project will not be leased by the applicant, and the land outside of the solar	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		development area will generally be released to the landowner for their use. Thus, within six (6) months of the completion of construction of the project, the applicant shall exercise good faith, reasonable efforts to cause to be recorded, by the landowner, a restrictive instrument to the County or other entity agreed to by the County and landowner over the avoidance areas (and the reburial location, if used) (collectively, the "ESAs") and restricting future uses of the avoidance areas consistent with the conservation of the applicable tribal cultural resource. Such restrictions shall not disclose the nature of the ESAs. In the event that the landowner is unwilling to record a restrictive instrument over the ESAs, the applicant shall direct the project Archaeologist to fully record the boundaries of the ESAs with the California NAHC, CHRIS, and County. In addition, the applicant shall notify the landowner in writing, with copies to the Tribes, County, and SMUD, that these ESAs are recommended to be preserved in place in perpetuity; the applicant proposes to do so without additional consultation with said entities. The intent of these notifications is to help ensure that future unrelated project proponents are alerted to the presence of restricted areas. • Monitoring Report. At the conclusion of monitoring activities, the project Archaeologist shall submit to the County a Monitoring Report for the project, which incorporates all previously unknown discoveries and presents the methods and results of all monitoring activities. The draft report shall be submitted to the County within 18 months of the completion of all project construction. Tribal monitors shall be invited to review or contribute to the report. For funerary objects and human remains, only sketches of materials shall be documented with DPR forms; no photography is permitted.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Ethnography Deliverable Phase 2. The ethnography may be prepared in both confidential and public-facing versions, shall be subject to review by consulting tribes in draft form, and approved by the County prior to dissemination to appropriate repositories. The draft report shall be submitted to the County within 24 months of the completion of all project construction. The approval of the final report by the County will deem the implementation of the deliverables complete.	
Chapter 15, Wildfire			
Impact WF-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan	LTS	No mitigation is required.	LTS
Impact WF-2: Exacerbate Wildfire Risk	PS	*WF-2a. Demonstrate Compliance with the California Fire Code, California Building Code, and SB 38 Requirements, 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, California Building Code requirements, and SB 38, 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
	PS	WF-2b. *Fire Hazard Reduction Measures for Temporary Wood Chip Stockpiling.*	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		To minimize the risk of fire hazards associated with the temporary stockpiling of wood chips on-site, the following management and safety practices shall be applied to the project: • Select stockpile locations that are at least 100 feet away from structures, vegetation, and other combustible materials and ensure these locations are accessible for fire suppression equipment and personnel. • Establish and maintain firebreaks around stockpile areas by clearing vegetation and other combustible materials and create 30-foot buffer zones around stockpiles to act as a barrier against fire spread. • Conduct regular inspections of stockpile sites to identify and mitigate potential fire hazards. • Spread and distribute wood chips in the intended areas of the site as soon as possible, in order to reduce the time that the materials are temporarily stockpiled on-site.	

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 $15,000.00. This deposit includes administrative costs of $1,097.00, 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.

2 PROJECT DESCRIPTION

INTRODUCTION

Sacramento Valley Energy Center, LLC (applicant) proposes to construct, operate, and ultimately decommission an approximately 200-megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy generating facility and associated 4-hour/100 MW AC battery energy storage system (BESS).

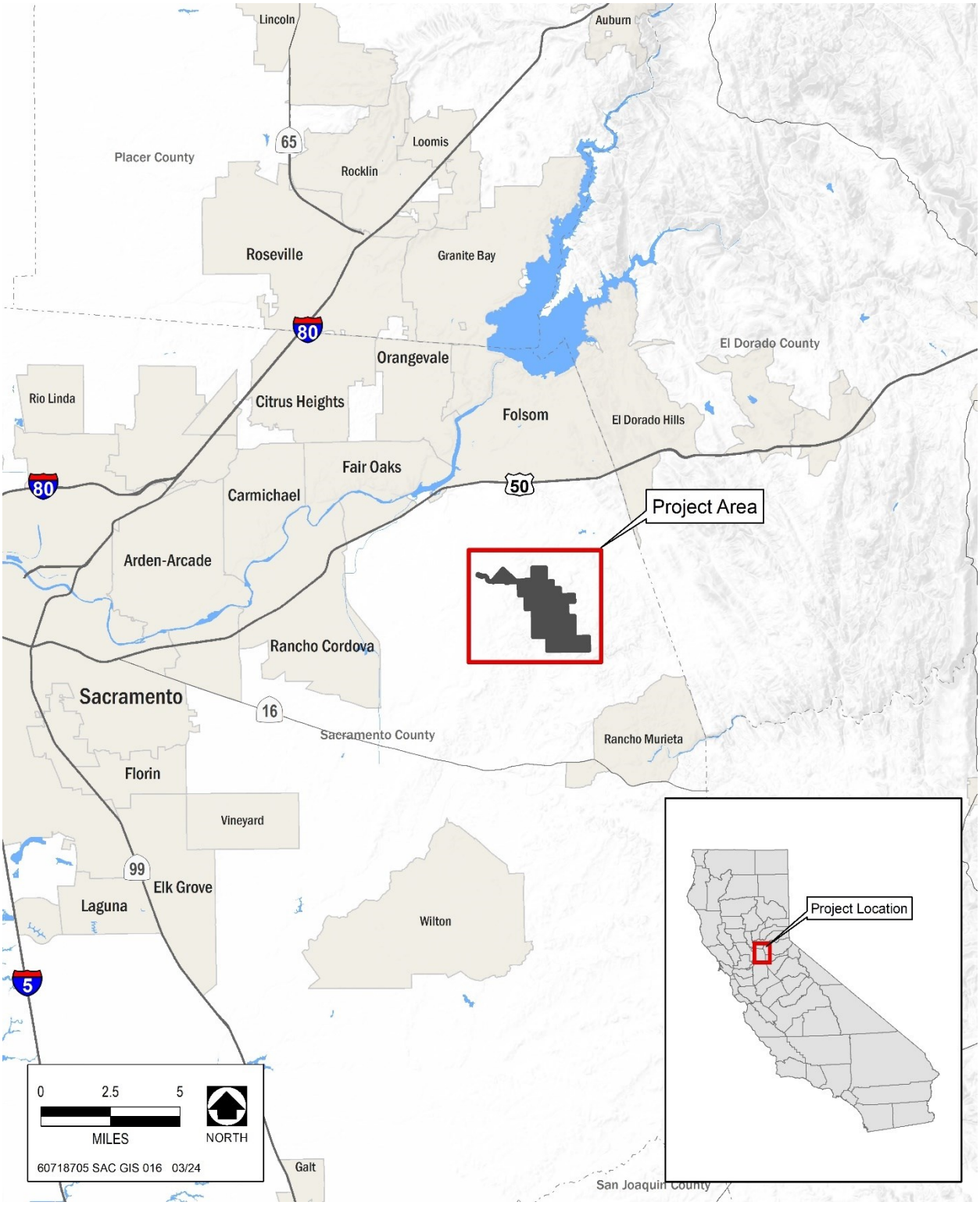
The Coyote Creek Agrivoltaic Ranch project (project) components include an on-site substation, inverters, solar array, fencing, roads, supervisory control, and data acquisition (SCADA) system, generation tie (gen-tie) line, and switchyard. The project's 230-kilovolt (kV) gen-tie line would be approximately 1.3 miles long and would parallel the boundary of the California State Parks Off-Highway Motor Vehicle Division's Prairie City State Vehicle Recreation Area (SVRA). The gen-tie line would connect with a new switchyard that would be constructed to interconnect into the Sacramento Municipal Utility District (SMUD) 230 kV powerline in proximity to the Prairie City SVRA. Following construction of the switchyard, SMUD would own and operate the switchyard facilities. Plate PD-1 shows the regional location of the project.

The project site comprises numerous parcels that total the approximately 2,704-acre project site in the Consumnes community of unincorporated Sacramento County. Of the approximately 2,704-acre project site, approximately 1,412 acres of this area would be developed to support the project and is collectively referred to as the "solar development area", which includes the proposed footprint of project construction activities and development, and the remaining approximately 1,292 acres are referred to as "adjacent other lands" and would not be developed as part of the project. "Adjacent other lands" are lands within the project site but located outside of the solar development area. The solar development area includes all locations used for temporary construction and all permanent project infrastructure. Areas denoted as adjacent other lands would be appropriately delineated with flagging and construction areas activities would be required to avoid adverse impacts within these areas. Table PD-1 summarizes the project site component terminology and acreage. Plate PD-2 shows the project site with the solar development areas and the adjacent other lands.

Table PD-1: Project Site Component Terminology

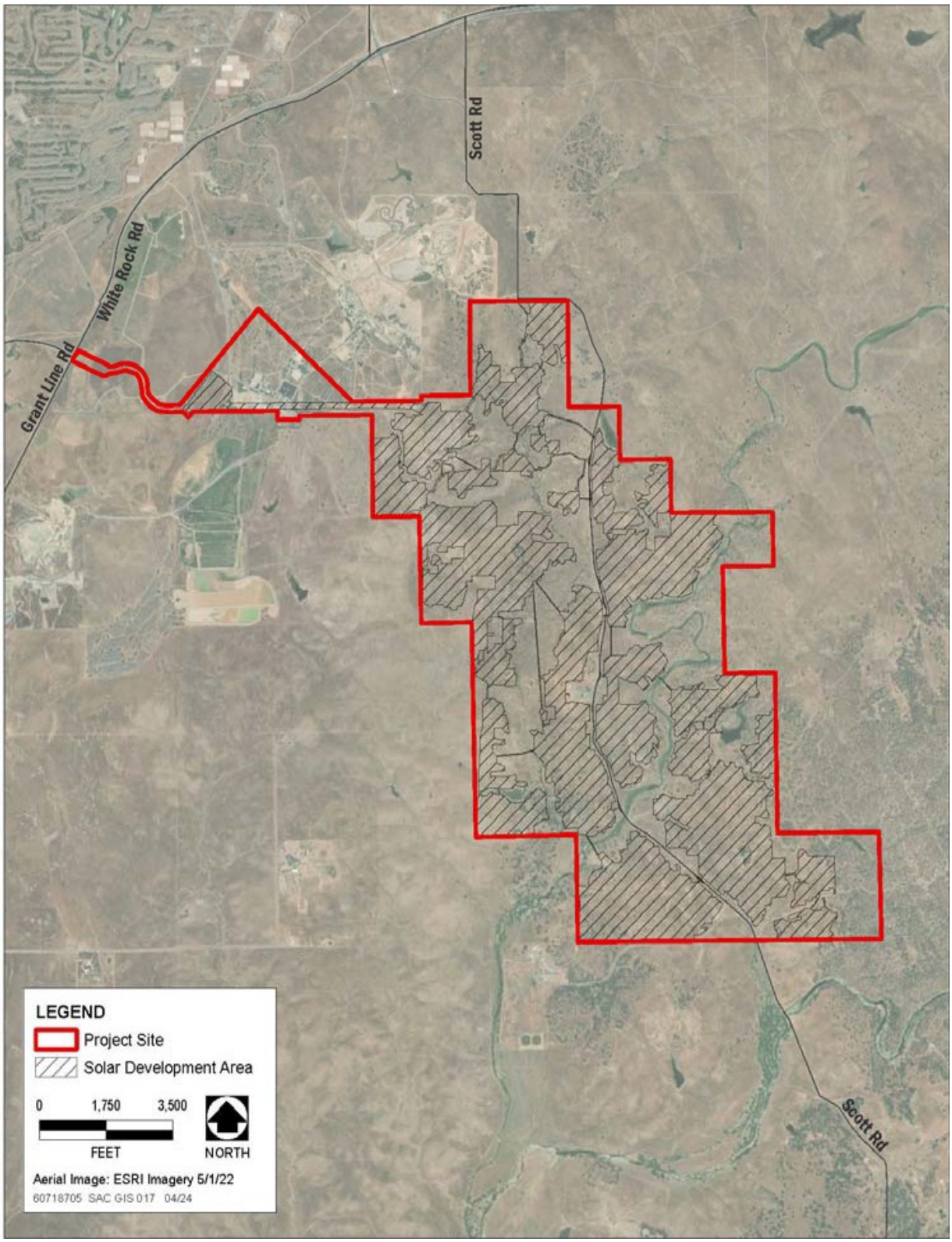
Project Site Component/ Terminology	Acreage	Description
Solar Development Area	1,412	All project site development would occur in this area. All temporary construction activities and all permanent project infrastructure would be in this area.
Adjacent Other Lands	1,292	No project development would occur in this area.
Total Area (Project Site)	2,704	The project site is the total area that comprises the solar development area plus the adjacent other lands.

Plate PD-1: Regional Location



Source: AECOM 2024

Plate PD-2: Project Setting



The project site includes what is known as the "Barton Ranch" near 3830 Scott Road in the Consumnes community of unincorporated Sacramento County. Barton Ranch is a large ranch that has historically been grazed with sheep and cattle. The proposed project would continue to support grazing activities within the project's fenced boundary following construction, and grazing and associated ranching activities would continue outside of the fenced boundary under the control of the landowner. These combined grazing activities would ensure grazing and ranching activities continue, so that that the use of the area continues as a large ranch under the Williamson Act. New troughs and fencing would be installed along with new seeding of portions of the ranch to provide quality grazing habitat within the fenced solar array. Additionally, areas of pollinator friendly habitat would be created. The project would incorporate solar energy generation, storage, and ancillary facilities and these solar energy generating facilities would operate within the solar development area concurrently with ranching activities.

Sacramento County (County) is the lead agency under the California Environmental Quality Act (CEQA) with primary responsibility for discretionary approvals of the proposed project, including a Use Permit. The County as the CEQA lead agency has prepared this Draft Environmental Impact Report (EIR) to comply with CEQA and the CEQA Guidelines.

PROJECT LOCATION

The project is generally located south of U.S. Route 50, northwest of Rancho Murieta, southeast of the Prairie City SVRA, and south of White Rock Road in the Cosumnes community (Plate PD-1). Specifically, it is located on what is known as the "Barton Ranch" near 3830 Scott Road. The geographic center of the project site is at 38.576278° North - 121.132944° West, at an elevation of 196 feet above sea level. A gen-tie line would extend approximately 1.3 miles to provide an interconnection to the SMUD 230 kV powerline that runs through the Prairie City SVRA.

The project site is comprised of existing legal parcels, but the project site does not encompass the entirety of these existing parcels. As described above, the total area of the combined parcels that makes up the project site is approximately 2,704-acres and of this total area, approximately 1,412 acres within the solar development area would be developed and disturbed. Approximately 1,292 acres is other adjacent land that would not be developed as part of the project. Refer to Plate PD-2 for an illustration of the solar development area within the project site. In Plate PD-2, the hatched symbology indicates the areas that would be disturbed during construction and would contain permanent project infrastructure, and the areas that are not hatched within the project site indicates the "adjacent other lands" which would not be disturbed by the proposed project.

Table PD-2 provides the Assessor Parcel Numbers (APNs), zoning, and approximate acreages that comprise the solar development area.

Table PD-2: Assessors Parcels within the Solar Development Area

Assessor's Parcel Number	Total Approximate Acreage	Zoning
072-0100-016	0.15	M-2
072-0100-018	9.28	M-2
072-0100-027	3.60	M-2; SPA
072-0110-031	4.37	AG-80; M-2
072-0110-045	0.57	AG-80
072-0110-067	44.58	AG-80
072-0110-069	60.34	AG-80; M-2
072-0110-070	54.55	AG-80
072-0110-071	25.91	AG-80
072-0110-072	13.92	AG-80
072-0110-073	9.49	AG-80
072-0110-074	17.13	AG-80
072-0110-075	6.92	AG-80
072-0110-076	15.49	AG-80
072-0110-079	26.72	AG-80; M-2
072-3160-002	17.57	M-2; SPA
073-0020-015	0.69	AG-80
073-0020-018	27.46	AG-80
073-0020-032	0.17	AG-80
073-0020-034	76.06	AG-80
073-0020-035	20.18	AG-80
073-0020-036	30.63	AG-80
073-0020-037	11.70	AG-80
073-0020-039	45.11	AG-80
073-0020-040	19.89	AG-80
073-0020-041	34.73	AG-80
073-0020-042	40.23	AG-80
073-0020-043	28.77	AG-80
073-0020-044	26.02	AG-80
073-0020-045	40.04	AG-80
073-0020-046	0.25	AG-80
073-0020-048	0.33	AG-80

Assessor's Parcel Number	Total Approximate Acreage	Zoning
073-0020-049	21.01	AG-80
073-0020-050	37.87	AG-80
073-0020-051	45.12	AG-80
073-0020-052	54.62	AG-80
073-0020-053	28.06	AG-80
073-0020-054	67.28	AG-80
073-0020-056	19.97	AG-80
073-0020-057	36.31	AG-80
073-0020-058	46.02	AG-80
073-0020-059	79.85	A-2; AG-80
073-0020-060	25.84	AG-80
073-0020-061	31.46	AG-80
073-0020-062	0.89	AG-80
073-0020-063	9.96	AG-80
073-0020-064	24.43	AG-80
073-0020-065	12.39	AG-80
073-0020-066	24.18	AG-80
073-0020-067	12.61	AG-80
073-0020-068	6.26	AG-80
073-0020-069	15.67	AG-80
073-0020-070	15.77	AG-80
073-0020-071	17.32	AG-80
073-0020-072	10.27	AG-80
073-0020-073	2.45	AG-80
073-0020-074	29.31	AG-80
073-0020-075	3.30	AG-80
073-0020-076	1.47	AG-80
073-0020-077	18.65	AG-80
073-0050-050	0.20	AG-80
No Designation	0.97	AG-80; No Designation
Total Approximate Acreage	**1,412.36**	**-**

Source: Dudek 2024
Notes: AG-80= Agricultural- 80 Acres; M-2= Heavy Industrial; SPA= Special Planning Area.
** Parcel boundaries will be verified upon completion of final land title survey prior to construction.

ENVIRONMENTAL SETTING

The proposed project site is situated along Scott Road within the Barton Ranch property in southeastern Sacramento County. The topography generally consists of rolling hills with gentle slopes. Elevations range from 150 to 350 feet above sea level. The majority of the project site is open grassland that has historically been used for grazing. Seasonal wetlands, vernal pools, and ephemeral drainages are scattered throughout the project site.

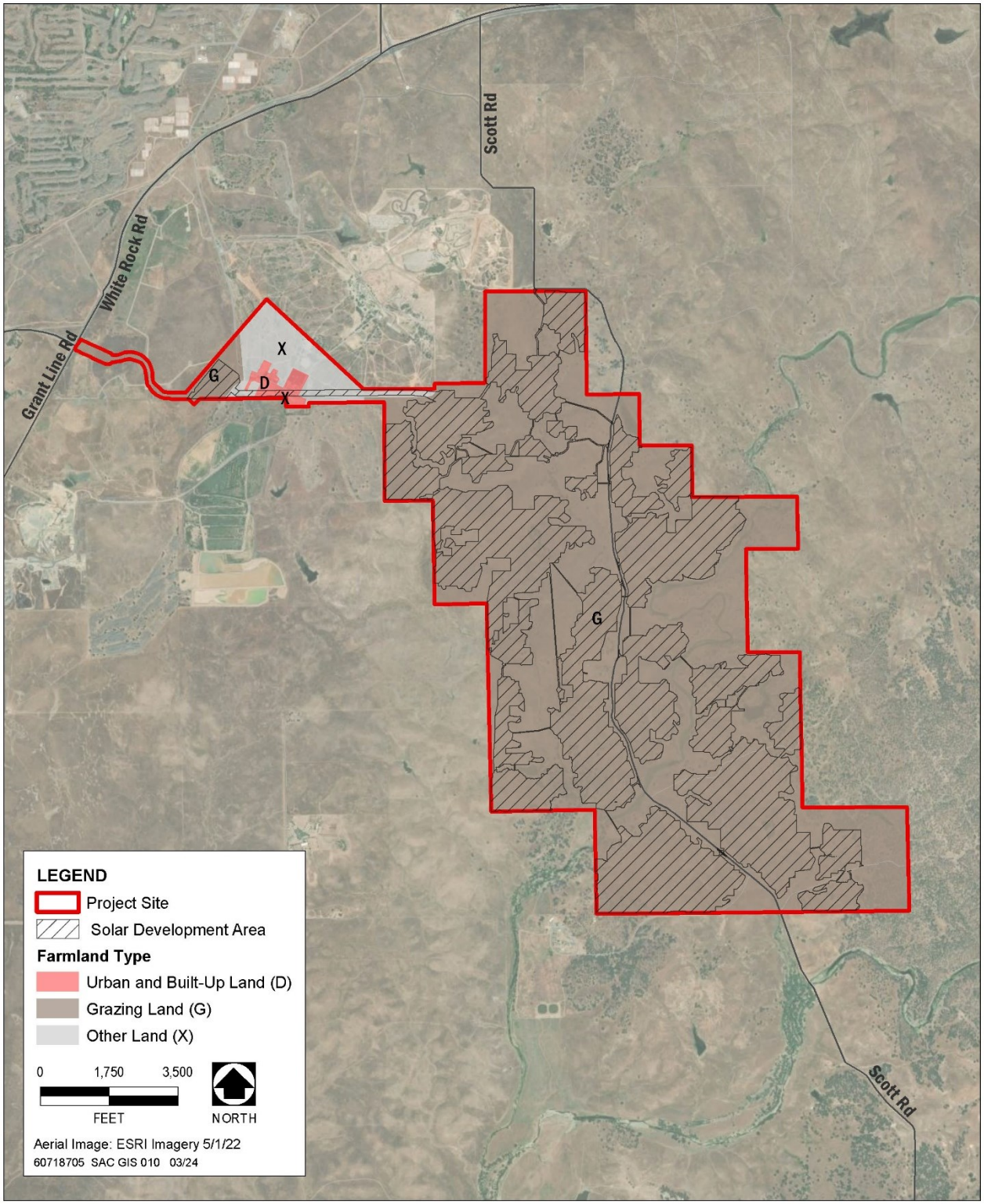
The project site is designated General Agricultural (80 acres) (GA-80) by the Sacramento County General Plan Land Use Element (County of Sacramento 2020) and the project site parcels are predominantly zoned AG-80 (County of Sacramento 2018). The parcels that the 1.3 miles of gen-tie lines would be installed on are zoned M-2 and SPA-Aerojet (County of Sacramento 2018). Solar development facilities are an allowable use with the GA-80 General Plan designation and the AG-80 zoning designation. As shown on Plate PD-3, a majority of the project site is as grazing land, but the proposed project site includes smaller areas of other land and urban and built-up land. The project would be sited on grazing lands, except for the gen-tie corridor, which would be on urban and built-up land and other land.

The predominant vegetation communities and land cover types in the solar development area include valley and foothill grasslands (over 1,000 acres of the 1,412-acre solar development area) and oak forests and oak woodlands (specifically concentrated in the south and eastern portions of the project site). Plate PD-4 identifies vegetation communities, land cover types, and aquatic resources present within the solar development area and project site. Within the solar development area, there are several aquatic features including three creeks and their associated tributaries (Coyote Creek, Carson Creek, and Little Deer Creek).

The project site is currently used for cattle grazing and has historically been used for sheep and cattle grazing and apiary facilities. The land underlying the site is subject to Williamson Act contracts 70-AP-044, 69-AP-004, 69-AP-005, 69-AP-006, and 69-AP-008. The Williamson Act contracts cover are areas larger than the project site. The Williamson Act contracts in place allow for “gas, electric, water and communication utility facilities.” Additionally, the Williamson Act contracts allow for solar PV facilities and battery energy storage in conjunction with agricultural activities, and thus, the project is an allowable use under the current Williamson Act contracts.

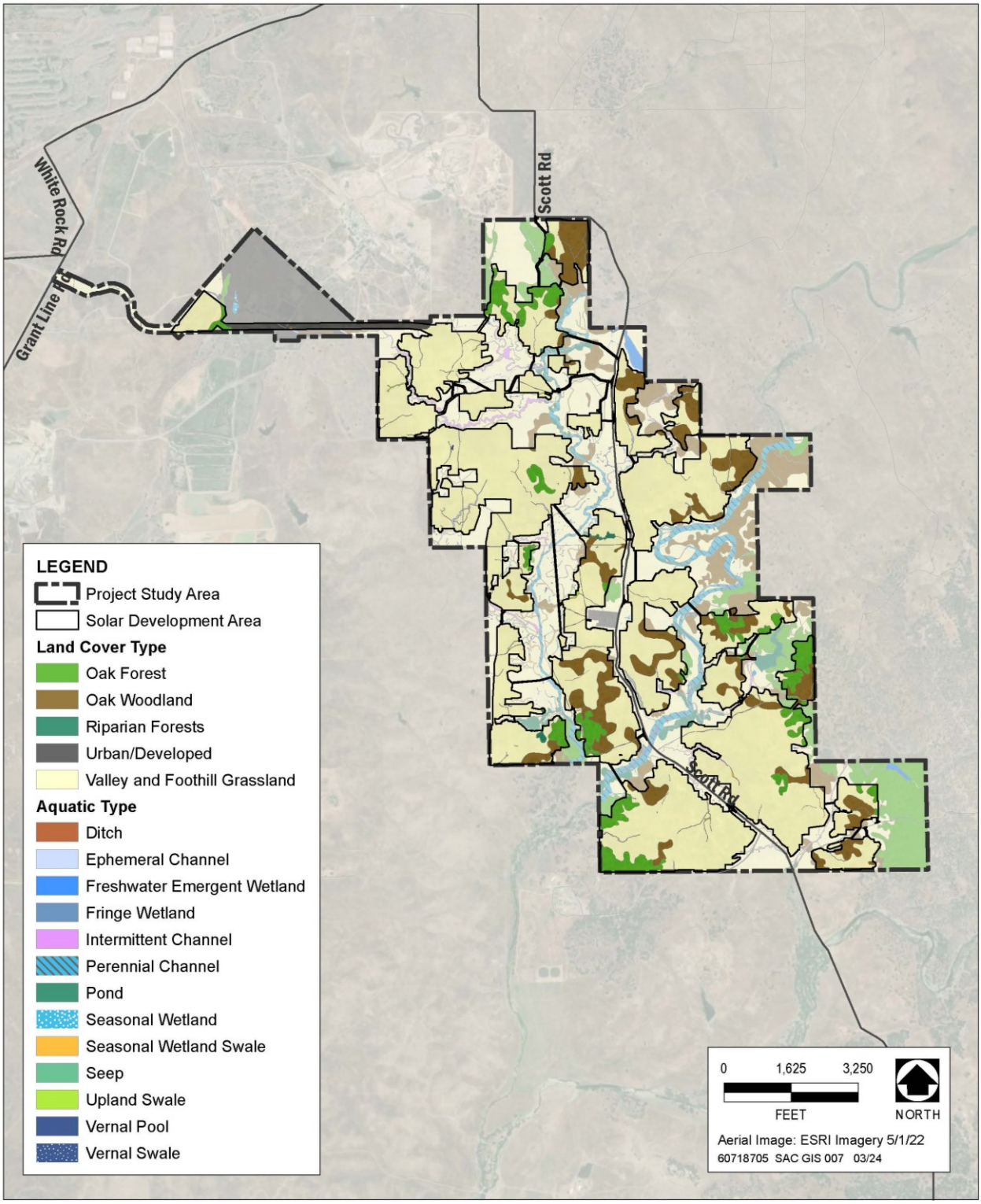
Land uses in the vicinity of the project site include grazing, mining, industrial lands, and the Prairie City SVRA.

Plate PD-3: Agriculture and Farmland



Sources: DOC FMMP 2020, Adapted by AECOM 2024

Plate PD-4: Vegetation and Land Cover Types within the Solar Development Area and Project Site



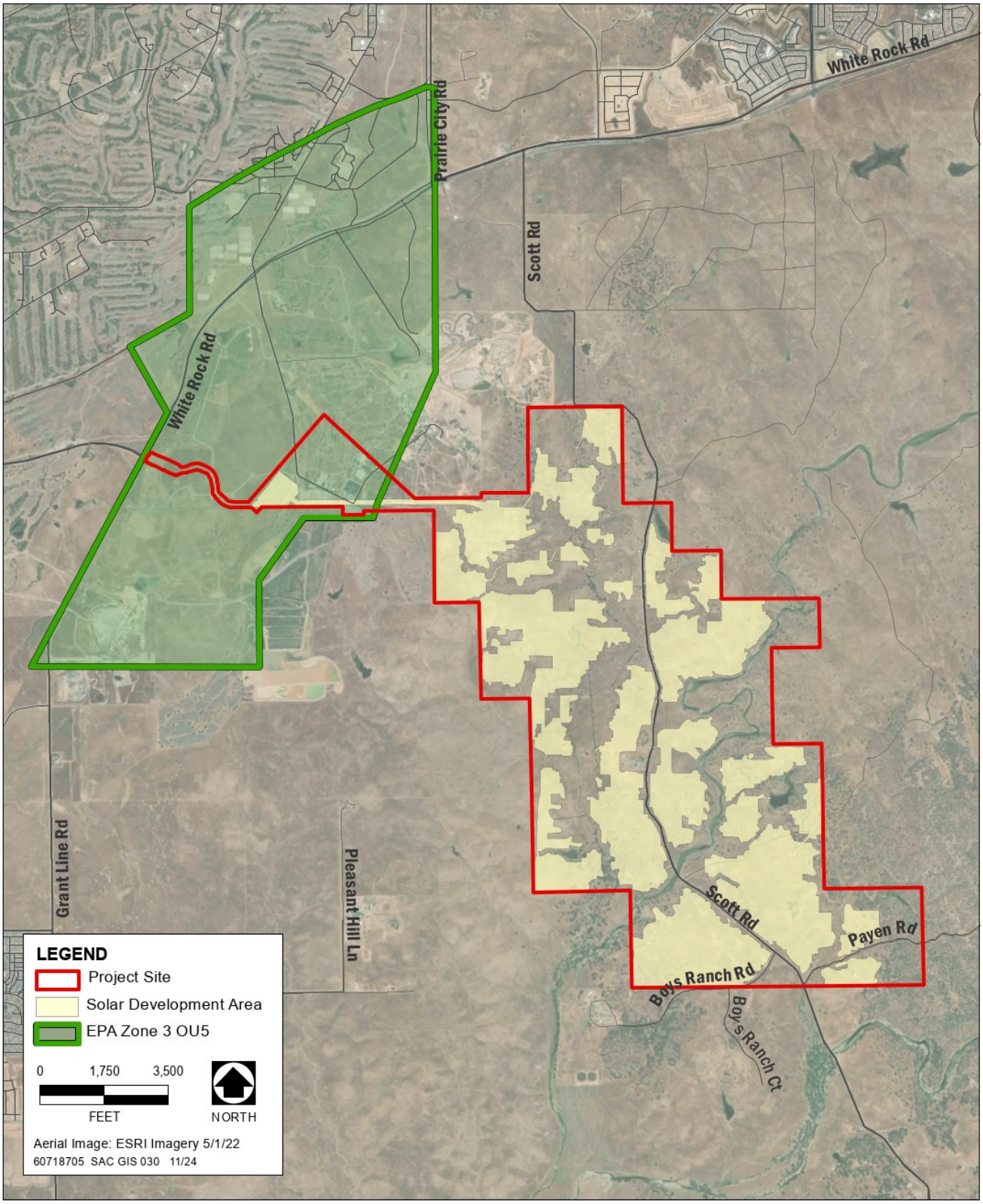
Sources: Appendix BR-1, Dudek 2024

The western one-third of the proposed switchyard, and the project site access road that is proposed from Grant Line Road to the switchyard, are within the Aerojet Special Planning Area (Perimeter Groundwater Operating Unit 5) which is within an area that Aerojet is performing groundwater remediation. There are numerous Aerojet groundwater extraction and treatment wells and groundwater monitoring wells within and near the project site (Dudek 2024a). The remediation activities are monitored by the Department of Toxic Substances Control, Regional Water Quality Control Board, and U.S. Environmental Protection Agency. Coordination with these agencies is ongoing to ensure that there is no conflict with the ongoing monitoring and mitigation activities. The boundary of the Aerojet contaminated groundwater plume in the project area is shown on Plate PD-5.

PROJECT BACKGROUND

The project is proposed by the applicant to generate and sell solar-generated electricity to SMUD. 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, subject to compliance with environmental review requirements, permitting, and applicable conditions and mitigation measures. 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. SMUD adopted the 2030 Zero Carbon Plan to achieve net zero 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.

Plate PD-5: Aerojet Superfund Site and Operable Units within the Project Site



Sources: Dudek 2023, EPA 2021

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 policies applicable to renewable energy.
- Provide cost-effective delivery of local utility-scale solar energy to support attainment of SMUD 2030 Zero Net Carbon Plan targets and Integrated Resource Plan targets.
- Support the SMUD region in attainment of state 2030 Renewable Portfolio Standards.
- Comply with SMUD Integrated Resource Plan siting and size criteria for local utility-scale solar facilities.
- Optimize use of existing electrical transmission 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 200-MW solar energy generating facility with an energy storage component with an approximate capacity of 400 megawatt hours. The energy generation process starts with 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

[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.

the DC is converted to AC. The voltage of the electricity is then increased by a transformer at each power conversion device 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.

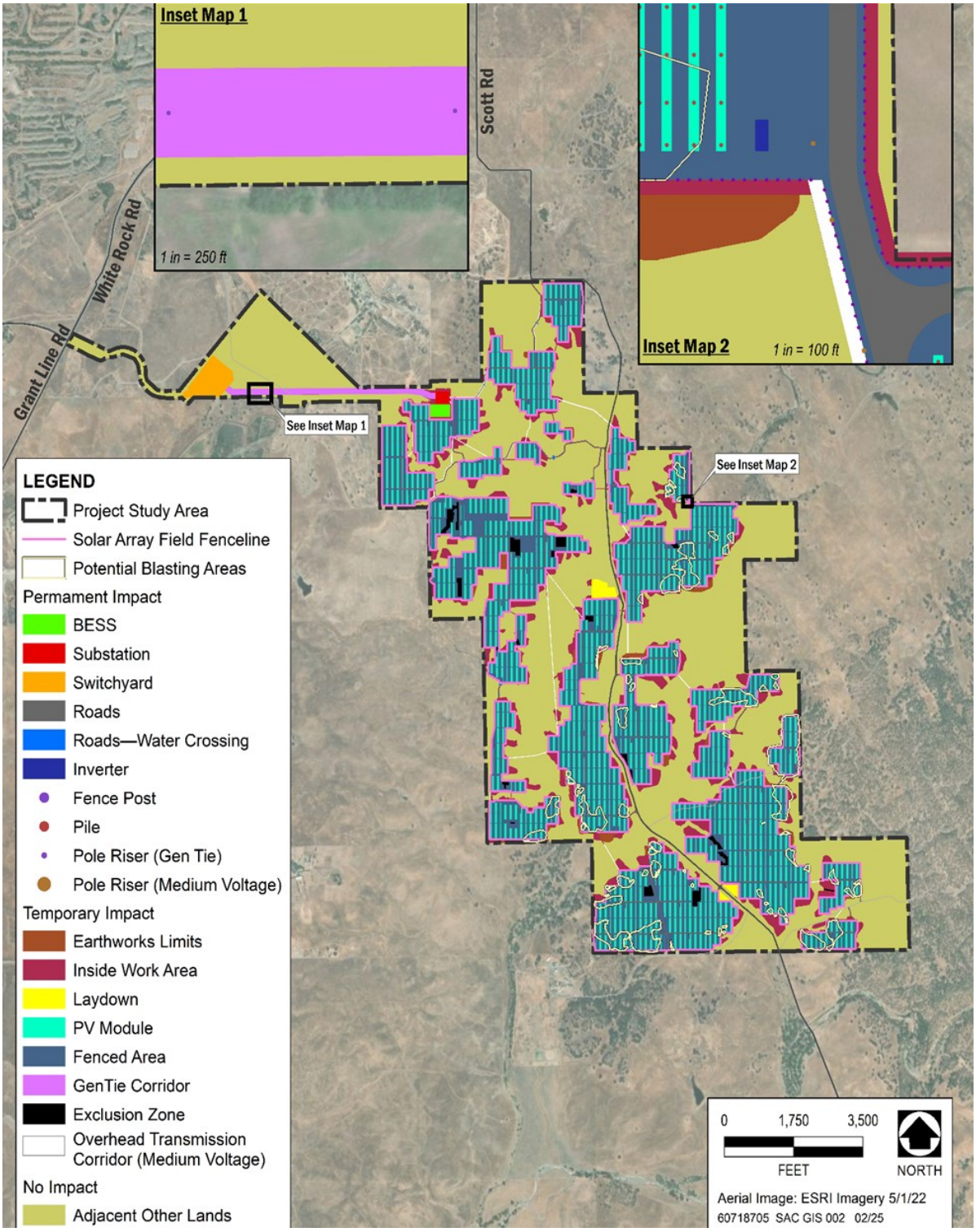
The County requires that the design and construction of the solar arrays, energy storage facilities, and auxiliary facilities (e.g., substation) are consistent with all applicable County building standards. The total acreage within and including the fence line of the project comprises the solar development area of the project site. Table PD-3 breaks down the component acreage of the project's solar development area. Plate PD-6 shows the proposed project site plan.

Table PD-3: Proposed Components of the Solar Development Area and Associated Acreage

Project Component	Acreage
BESS	3.72
Earthworks Limits	39.63
Exclusion Zone[1]	16.69
Fence Post	0.29
Fenced Area	726.32
Gen-Tie Corridor	18.25
Inside Work Area	186.76
Inverter	0.23
Laydown	8.19
Overhead Transmission Corridor (Medium Voltage)	10.68
Pile	2.21
Pole Riser (Gen-Tie)	0.02
Pole Riser (Medium Voltage)	0.03
PV Module	341.95
Roads	37.27
Substation	2.40
Switchyard	17.21
Water Crossing	0.41
TOTAL	**1,412[2]**

Source: Dudek 2023
BESS = Battery Energy Storage System
Gen-tie = generation tie
PV = Photovoltaic
[1] Exclusion zone includes avoidance areas that complete avoidance will be applied within the solar development area
[2] Rounded to the nearest whole number

Plate PD-6: Proposed Project Site Plan



Source: ESRI 2023, Dudek 2023

PROPOSED PROJECT FACILITIES

The 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 transport energy from the on-site substation to SMUD's 230-kV powerlines, as shown on Plate PD-4. In addition to generation of energy, the project would incorporate battery storage, further described below.

The subsections below describe the proposed project components in more detail.

SOLAR ENERGY GENERATION SYSTEM

The proposed project would generate approximately 200 MW AC of solar power. Approximately 726 acres within the 1,412-acre solar development area would be fenced and would include various components, including solar panels, single axis tracking support structures, inverters, transformers, SCADA systems, and interconnection facilities (located at the on-site substation). The project's footprint (the "solar development area") is illustrated in Plate PD-6.

Depending on the selected manufacturer for the PV modules, the modules would be mounted on fixed-tilt, single- or dual-axis tracking structures. The PV modules would be grouped in 1 to 4 MW AC arrays. Fixed-tilt arrays would be oriented in east-west rows and would face in a generally southern orientation with a tilt angle of 10 to 40 degrees to maximize the amount of solar radiation absorbed over the year. Single-axis trackers typically rotate ±60 degrees (0 degrees is horizontal) along a north/south axis to track the sun's movement throughout the day. Structural support elements, made of corrosion-resistant steel, aluminum, or equivalent materials, would be attached to circular piers or I-beam posts that would be direct-driven into the prepared base grade of the site.

Solar racking systems are structures that securely hold and position solar panels; the racking systems would be supported, when practical, by driven piers (piles) directly embedded into the ground and would be parallel to the ground. Each rack would hold approximately 80 to 90 panels (depending on final configuration), and at its highest edge would have a maximum height of approximately 12 feet above grade, depending on the dimensions of the chosen panel and racking technology. The minimum clearance from the lower edge of the panel to ground level would be approximately 18 inches, pending final design.

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. The adjacent pad-mounted transformer would step the voltage up to a medium-voltage level. The inverter stations are typically open-air and approximately 12 feet in height. The medium-voltage outputs from each of the pad-mounted transformers are collected in combining switchgear located at discrete locations on the project site. The output power from the inverter stations is then fed to the AC collection system through an aboveground or belowground collection system. This AC collection system would deliver the electricity to the 230-kV on-site substation, where the voltage would be stepped up through a transformer to the

interconnection voltage. Typical inverter stations are shown in Photo PD, these facilities would be installed upon a concrete mat foundation.

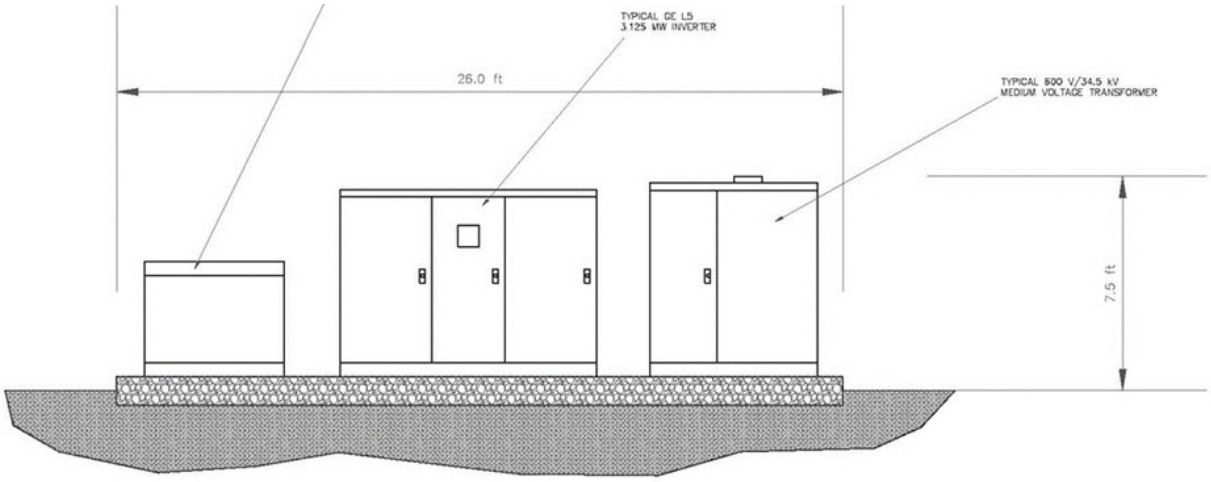


Photo PD-1: Diagram of Typical Inverter Station

On-Site Substation

The on-site substation would be constructed in the northwest portion of the project site, as shown on Plate PD-6. The project's on-site substation would be the termination point of the collection system for 34.5-kV electricity. The substation transformer would step-up the voltage from the collection-level voltage to 230 kV. The communication system may include aboveground or belowground fiber-optic cable or microwave tower within the substation's fenced boundary. The project would be interconnected to the regional transmission system from the on-site substation/switchyard via the 1.3-mile gen-tie line facilities described in this project description. A conceptual substation is shown in Photo PD-2.

Additionally, the project's on-site substation would host the grid intertie safety equipment and switches required to interconnect to the high-voltage transmission system. The project's on-site substation would consist of components up to 150 feet in height, and feeders would be overhead lines constructed with 150-foot-tall and 100-foot-tall poles for the single and double circuits, respectively. The substation facilities would be enclosed with secured fencing and include security lighting.

A SMUD distribution line feeding electricity to the Barton Ranch extends across two solar array blocks. Portions of the distribution line that conflict with the solar array would be rerouted underground to align with solar array racking and pilings. This relocation would be within areas already disturbed by project activities, within the solar development area.

Photo PD-2: Proposed Project Conceptual 230 kV Substation.

Battery Energy Storage System

The project would include a centralized BESS that would be constructed adjacent to the project substation to help meet peak demand even when there is reduced array production (e.g., on cloudy days or at nighttime). The approximate area of the BESS facilities would be approximately 3.72 acres. The BESS is proposed to provide a capacity of approximately 400 megawatt hours in small modular structures similar in appearance to cargo shipping containers (see Photo PD-3). The maximum height of the modular system would be approximately 25 feet. The associated inverters, transformers, and switchgear would be immediately adjacent to the BESS facilities on an outdoor concrete pad. The project may store energy generated by the project and energy from the grid. It is anticipated that the centralized BESS would provide the best solution for the project, but changing technology may allow for BESS facilities to be distributed at the inverters in the future.

The BESS equipment would have a fire rating in conformance with local fire authority and County standards. The BESS facilities would have heating, ventilation, and air conditioning (HVAC) to maintain battery efficiency. Power to the HVAC system and lighting, among others, would be provided through a connection to the on-site station service transformer. The BESS would be un-staffed and have remote operational control. Periodic inspections/maintenance would be performed, as necessary.

Photo PD-3: Examples of Battery Storage Containers

The BESS would be designed to comply with the National Fire Protection Association (NFPA) 855 guideline, "Standards for the Installation of Stationary Energy Storage Systems". Additional BESS-related safety standards and regulations will be required for the project and would include complying with Senate Bill 38, additional NFPA guidelines (such as NFPA 68 and 69), Underwriters Laboratory Solution 9540A, and utilizing other advanced technology components in the BESS design. Refer to Chapter 9, "Hazards and Hazardous Materials" for additional information regarding BESS safety standards. The BESS would be monitored through the Emergency Management System and Battery Management System. If the Battery Management System detects abnormalities outside of safe operating parameters of voltage, state of charge, state of health, or temperature, it will shut down the unit and/or block and alert the operator. If a user identifies a risk, a unit, block, or full system can be shut down remotely. There are also manual shutoffs on-site in case of emergency.

Generation Tie Line and SMUD Switchyard

The energy from the solar energy generation and energy storage systems would be transported from the on-site substation to SMUD's 230-kV powerlines. The route of the gen-tie line would extend approximately 1.3 miles from the facility's on-site substation to the western terminus of the gen-tie line where it would interconnect into SMUD facilities (see Plate PD-2 and Plate PD-6). The 230-kV gen-tie line would consist of one or two single-circuit structures, which could be constructed with up to 150-foot-tall wood, concrete, or steel poles. The gen-tie line would use existing dirt and paved access roads where available, but improvements, such as widening or clearing existing dirt roads, and new road sections may be required for construction. These areas would be restored after construction is completed. A lower-voltage powerline and communications line would share the same structures or share the same easement to provide power and communications to the project site.

A new 230-kV switchyard approximately 600 feet by 600 feet would be constructed at the point of interconnection with SMUD's existing 230-kV powerline. The new switchyard would be owned and operated by SMUD following construction and may include restroom facilities for workers completing maintenance activities. Additionally, an infiltration basin would be constructed in the switchyard to control stormwater run-off. The area for the switchyard and interconnection improvements would be constructed within an easement over Prairie City SVRA property.

The switchyard would be designed to avoid or relocate existing groundwater monitoring wells. The switchyard would be in an area in which Aerojet is performing groundwater remediation. The remediation activities are monitored by the Department of Toxic Substances Control, Regional Water Quality Control Board, and U.S. Environmental Protection Agency. Coordination with these agencies is ongoing to ensure that there is no conflict with the ongoing monitoring and mitigation activities.

Prairie City State Recreational Vehicle Area

The applicant has coordinated with the Prairie City Off-Highway Vehicle Park to modify kart-track facilities to better accommodate the construction of the proposed project gen-tie line. Changes were necessary to accommodate the placement of a gen-tie pole via moving bleachers and non-permanent garage-pit area as well as the Track's office. Other improvements are not necessary for gen-tie construction and operation, but are a commitment by the applicant to improve the user experience for go-kart track users beyond what is required for the gen-tie line. The track modifications are anticipated to occur during the 18-month construction window, but ultimately would be completed at the timing and discretion of California State Parks. Temporary closures of the track are anticipated to be necessary to accommodate construction of the gen-tie, and would be coordinated with park officials, as necessary. The improvements would involve the movement of temporary infrastructure such as bleachers, relocation of the track office, removal of approximately 276 feet of existing track and addition of approximately 403 feet of new track. The onsite canopy/structure and office/retail modular units associated with the track would be moved from its current location approximately 100 feet north. Limited paving around these structures in previously disturbed locations may be necessary to ensure adequate accessibility to these structures. The improvements are entirely contained within the area currently fenced for the kart track or in the adjacent parking lot. Track improvements would be carried out at the discretion of state parks, and state parks would be responsible for any additional surveys, permits, or permissions associated with the improvements.

Ancillary Facilities

Access Roads

Primary access to the project site would be from Scott Road. Access to components of the solar facility would be controlled through entrances with security gates during construction and operations. The project access roads would be approximately 20 feet wide and would be unpaved with an aggregate base. The internal roadways would comprise approximately 37 acres of the 1,412-acre project's solar development area

(under 3 percent of the total solar development area). The internal roadway construction activities would include 0.19 acres of new permanent water crossings and 0.41 acres of temporary impacts related to water crossings).

PERIMETER FENCE

An approximately seven-foot-tall agricultural-style woven wire fence would be installed to enclose the solar arrays and supporting facilities. Barbed wire would be used for security purposes in select areas such as the substation, switchyard, and BESS, which are anticipated to have chain-link fencing with barbed wire or an equivalent. As discussed above, access into the project site would be provided through controlled access drive-through gates to prevent unauthorized access to the site. The total height, above grade, of the fence would be approximately seven feet and would be installed around each solar array, BESS facilities, and substation. The fence would be monitored periodically to detect any intrusion or defects.

EXCLUSION ZONES

As depicted in Plate PD-6, the project site would include areas indicated as “exclusion zones”. Exclusions zones are areas within ‘perimeter fence’ and ‘inside work areas’ where no direct permanent construction activities would occur. These exclusion zones would be clearly delineated using temporary exclusion fencing during construction to avoid potential permanent impacts. Following conclusion of construction, temporary fencing would be removed so that grazing of these areas can continue as it had prior to construction activities commencing. As no solar components are sited in these areas, disturbance to these locations during operations is not anticipated.

SECURITY SIGNAGE AND LIGHTING

As discussed above, the project would construct a fence surrounding the perimeter of the proposed facilities. Security lighting would be installed as needed, and signs would be posted on all gates and doors at regular intervals. Signs would be placed at 75-foot intervals along roadways and approximately 500-foot intervals if there are no nearby roads providing access, to provide warning of the high-voltage facilities. Access to the site would be controlled and gates would be installed at each entrance to the property.

Security lighting would be installed at primary access gates, the on-site substation, and at the entrances to the BESS facilities to 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.

ELECTRICAL SERVICE

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

COMMUNICATION SYSTEMS

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. The SCADA system would be implemented to remotely monitor the project 24 hours per day, 7 days per week during operations to ensure safe and efficient operations.

LANDSCAPING

Landscaping would be installed and maintained along Scott Road. A mix of native plantings would be installed, including live oak thickets and hedgerows planted along Scott Road to soften, rather than fully screen, the views of the project. 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 five years to ensure establishment and facilitate growth. The faster-growing interior live oak species have been selected to provide softening after five years. Landscaping would be installed according to the Preliminary Landscape Plan (Appendix AE-1).

FIRE CONTROL

The PV modules and ancillary equipment would be constructed of fire-resistant material. The project would be designed to comply with all applicable California Fire Code requirements, California Building Code requirements, and SB 38 requirements and the applicant would be required to engage with local fire and emergency management officials to ensure compliance. During the dry season, grasses within the facility would be kept at a height of six inches or less to reduce wildfire risk. This is anticipated to be accomplished via grazing, although supplemental mowing would be completed on an as-needed basis to ensure fire risk is mitigated. Lock boxes would be placed at all gated entrances to always allow access to emergency services.

The operation of the BESS includes a risk of a thermal runaway event (fire) resulting in air emissions including releases of flammable gases and hazardous pollutants. The equipment selection, site design, and operation of the BESS are subject to state and national fire prevention regulations standards to prevent the risks of thermal runaway events. The current required safety approach includes site-specific emergency response plans, hazard mitigation analysis, and first responder training to minimize risks to first responders and the public. The BESS system for the proposed project would be monitored and managed 24 hours per day and 7 days a week by the Battery Management Systems (BMS) software to automatically report to a remote operator to prevent conditions that can lead to a fire. The BMS would monitor abnormalities outside of safe operating parameters of voltage, state of charge, and state of health or temperature, and it would shut down the unit (segregated battery containers) and/or block of units and alert the operator should any abnormal parameters be identified. The BESS would also have secondary manual controls on-site. Fire alarm control panels with dedicated back up power would be installed and evaluated to ensure they are placed at a safe distance from the BESS units in order to provide real time critical information to first responders. Refer

to Chapter 9, “Hazards and Hazardous Materials” for additional information regarding BESS safety standards.

WATER SUPPLY

A Water Supply Assessment (WSA) has been completed for the proposed project in compliance with Senate Bill 610. The WSA evaluates potential impacts of construction, operations, and decommissioning on the water table (Appendix HYD-1, Water Supply Assessment and Verification) and for consistency with the Groundwater Sustainability Plan.

The project proposes to meet the project’s demands for construction and decommissioning (253 AF each) from groundwater obtained from Sloughhouse Solar Project wells or the Sacramento County Water Agency (SCWA), or a combination of the two sources (Dudek 2024b, Dudek 2024c, and SWCA 2024).

CONSTRUCTION

Construction is planned to occur in multiple phases over approximately 18 months. As described in Table PD-4, construction would include site preparation and installation of best management practice measures, perimeter fence installation, site preparation and clearing/grading, tree removal, underground work (trenching), system installation, gen-tie line installation, energy storage system, switchyard, and collector substation, testing and commissioning, and site cleanup and restoration. These activities would overlap in certain phases, and all are expected to occur within the estimated 18-month construction duration.

Typical construction work hours are expected to be from 6:00 am to 4:00 pm, Monday through Friday. Overtime and weekend work would be used only as necessary to meet schedule milestones or to accelerate the schedule and would be required to comply with all applicable California labor laws and applicable County rules. Occasional nighttime work may be required based on overall construction timing or worker safety such as avoidance of excessive midday heat. Work at night may be performed occasionally within limited areas of the site.

Daily trip generation during project construction 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 250 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.

Primary construction activities and durations are presented below, in Table PD-4.

A Spill Containment and Countermeasures Plan for the site would be prepared to cover spill prevention and countermeasures for handling materials during construction.

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). Prior to site preparation, best management practices would be implemented to ensure adequate soil stabilization measures and off-site sedimentation are avoided prior to significant earth-disturbing activities.

This would include measures such as silt fence installation, installation of avoidance fencing for sensitive areas and exclusion zones, implementation of rock pads at public road entrances and exits, and more.

Table PD-4: Proposed Project Construction Duration and Workers by Construction Activity

Construction Activity	Construction Duration	Daily Construction Workers
Perimeter fence installation	3 months	
Site preparation and clearing/grading, including potential blasting activities	10 months	
Tree removal	3 months	
Underground work (trenching)	5 months	Maximum = 476
System installation	10 months	Average = 250
Gen-tie installation	1 month	
Energy storage system, switchyard, and collector substation	11 months	
Testing and commissioning	3 months	
Site cleanup and restoration	3 months	

Note:
Gen-tie = generation tie

Tree Removal

Site preparation would include the clearing of trees, removal of root balls, and backfilling of holes to accommodate solar construction. Merchantable timber would be hauled off site for local use, and the remainder would be chipped on site and temporarily stockpiled to assist in site stabilization and revegetation efforts later in the construction sequence.

A total of approximately 4,787 trees would be removed from the solar development area to accommodate the solar generating facility and ancillary structures (Dudek 2024). Of these 4,787 trees that are planned to be removed, 4,394 trees are subject to the Sacramento County Tree Preservation Ordinance. This inventory equates to 54.61 acres of tree canopy of with oak woodlands, forest, and riparian areas within the solar development area (Dudek 2024).

Blasting

Rock blasting is the controlled use of explosives to excavate, break down, or remove rock in areas within the solar development area to be graded. In some locations, blasting may

be required in areas where underlying soil conditions require blasting of granitic materials to establish foundations and final graded elevation. The result of rock blasting is often known as a rock cut.

The most commonly used explosives today are ammonium nitrate/fuel oil (ANFO)–based blends due to their lower cost compared to dynamite. Construction of the project would include up to one blast per day using ANFO for a total of 35 blasts. Each proposed blasting event would be no more than approximately 8 tons of charge detonated in multiple instantaneous blasts of no more than 2.8 kilograms (kg) charges spread out over a maximum 30-minute duration in total on any given day. Each blast would displace between 10,000 and 12,000 cubic yards of soil. The average depth per blast is 12 feet and the total cubic yards of soil blasted is estimated to be 320,000 cubic yards.

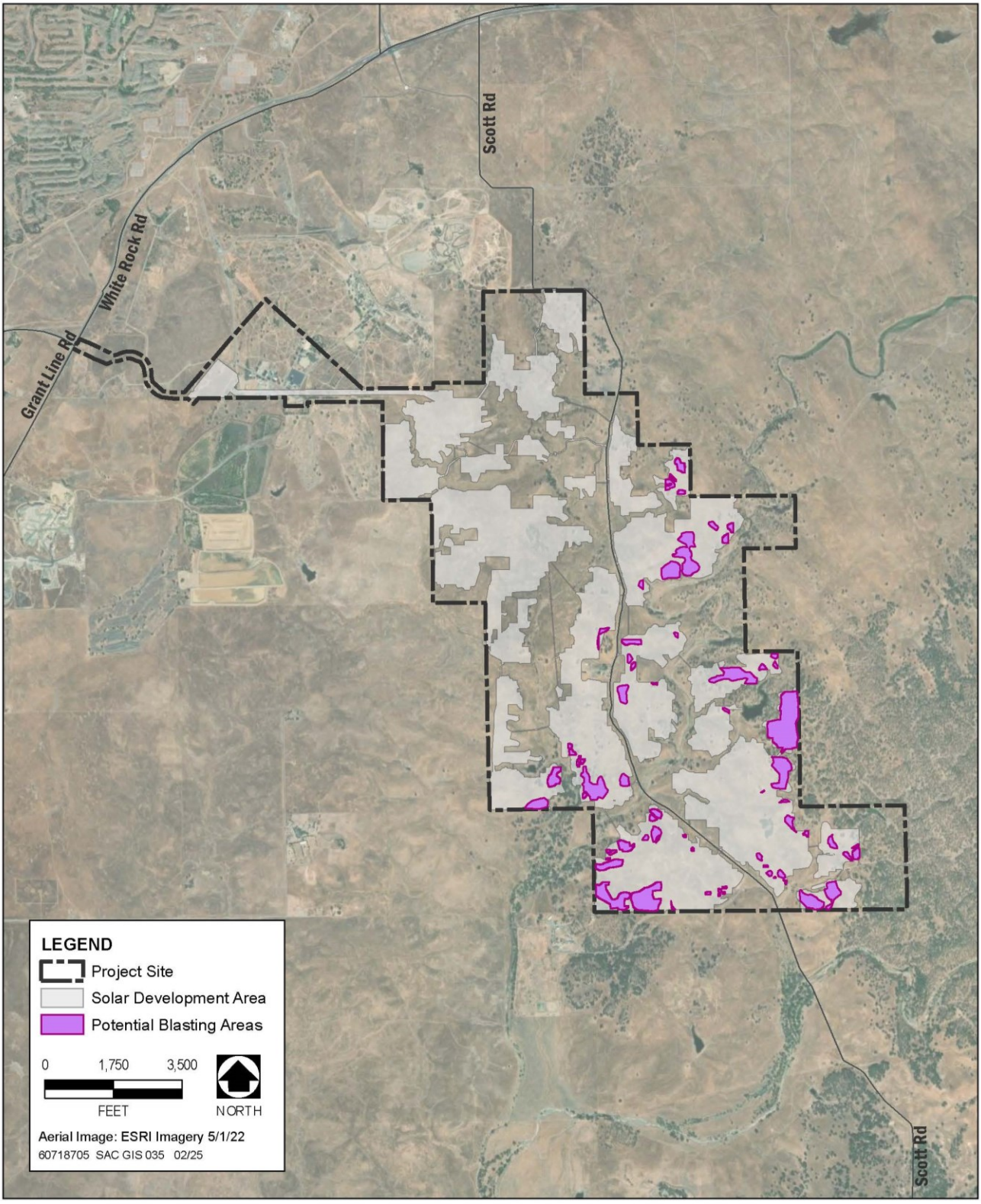
Preliminary blasting locations are included in Plate PD-7. The potential blasting areas identified in Plate PD-7 total approximately 106 acres within the solar development area. Areas that are blasted would be restored in the same fashion as areas that are graded, and fully revegetated with suitable grazing friendly and pollinator friendly seed mixes.

As discussed in Chapter 12, “Noise,” a Blasting Plan would be prepared before any blasting takes place and the Blasting Plan would be required to implemented by the general contractor. The Blasting Plan would identify final locations of proposed blasting, health, and safety measures to ensure that members of the public and on-site workers do not enter the blasting area, and blasting procedures. The plan would identify the proper use, storage, and transportation of explosives consistent with safety requirements as defined by federal, state, and local regulations. Only authorized, qualified, and experienced personnel can handle explosives, and all explosive material would be in a location that avoids exposure to flame, excessive heat, sparks, or impact. Blasting times would be limited to the hours permitted in the County ordinance and nearby residents would be notified in advance of blasting. Additionally, the residents at 3850 Scott Road would be offered the option to temporarily relocate for the duration of blasting activities within 0.5 miles of this residence.

GRADING

It is anticipated that approximately 7,500 cubic yards of fill, associated with the Switchyard construction, would be exported off-site during construction. It is anticipated that the rest of the material would remain on-site, and any excess cut material would either be used to support other construction backfill needs (e.g., filling of holes following root ball removal), would be distributed across larger swaths of the array area, or would be stockpiled and stabilized for distribution at decommissioning.

Plate PD-7: Potential Blasting Areas within the Solar Development Area



Source: Dudek 2024

Table PD-5 provides an overview of the grading quantifies anticipated for the various project components.

Table PD-5: Estimated Grading Quantities by Project Component

Project Component	Cut (Cubic Yards)	Fill (Cubic Yards)	Net (Cubic Yards)
Solar array	680,000	520,000	160,000 (Cut)
Access roads	65,000	65,000	Balanced
Erosion control sediment basins	510,000	510,000	Balanced
Substation and battery energy storage system	170,000	80,000	90,000 (Cut)
SMUD switchyard	36,000	28,500	7,500 (Cut)

Source: Dudek 2023
SMUD = Sacramento Municipal Utility District

Following grading, racking installation would begin. Much of the project would be installed via direct-driven piles to support the solar modules and racking. Some piles would require pre-drilling in areas of shallow bedrock or rocky soils. Following installation of piles, racking and torque tubes would be installed to hold the solar modules. Prior to installation, the PV modules would be off-loaded and installed using small cranes, boom trucks, forklifts, rubber-tired loaders, rubber-tired backhoes, and other small- to medium-sized construction equipment as needed.

A variety of methods would be used for installation of underground collection lines. In areas of underground collection, plowing or trenching equipment would be used that excavates the line location, places the line, and immediately backfills thereafter. This allows for a reduction of soil disturbing activities compared to traditional trenching. In some locations, dependent on soil conditions, more traditional trenching via backhoe may be required. In other locations, aboveground collection would be used for collection lines.

Inverters would be delivered via truck to their location via the internal gravel access roads, where they would be put in place via a boom or crane. BESS, substation, and switchyard equipment would similarly be delivered for installation to their location of installation.

Following installation of the array and interconnection facilities, commissioning and testing would occur. Commissioning would generally certify that facility equipment is certified and ready for energy delivery into the electric grid. Commissioning would be completed in coordination with SMUD to ensure that all utility standards and expectations are met.

As commissioning of the facility progresses, site cleanup and restoration activities would be ongoing. This includes final site stabilization of exposed soils and final seeding and revegetation, cleanup of any remaining on-site refuse, final installation of project

landscaping, removal, and restoration of site laydown yards/temporary construction facilities.

Typical construction equipment would include, but is not limited to, skid loaders, forklifts, pickup trucks, flatbed trucks, water trucks, graders, bulldozers, scrapers, rollers, tractors, crushing/processing equipment, excavators, other material handling equipment, small cranes, all-terrain vehicles, pile drivers, generators, line trucks, boom trucks, backhoes, and other construction equipment.

During construction, temporary facilities would be developed onsite to facilitate the construction process. Temporary laydown yards would 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. These facilities would be in the areas designated on the proposed site plan.

Water consumption during construction is estimated to be approximately 253 acre-feet for dust suppression, earthwork, and plant re-establishment over an approximately 18-month period. The project proposes to meet demands for construction and decommissioning (253 AF each) with groundwater obtained from Sloughhouse Solar Project wells or the SCWA, or a combination of the two sources (Dudek 2024b, Dudek 2024c, and SWCA 2024). Construction-phase water demand would be greatest during site grading, which would consist of scrapers, dozers, graders, and disc and roll compaction over the site. Operational water use is described below, under the “Operation” section.

Following construction, to provide for agricultural grazing activities and support pollinator species foraging during project operations, the project’s Agricultural Management Plan (Dudek 2025) provides that site-specific seeding would occur based on: (1) soil conditions; (2) appropriate grassland species; (3) pollinator habitat; and (4) dietary preferences of sheep. The site would use a combination of seed drills and/or broadcast seeding followed by light raking, as needed. Hydroseeding and hydro-mulching may also be used depending on the timing and site-specific conditions. Seeding is not recommended in June, July, or August due to high temperatures in the region and subsequent low germination success. As such, seeding is recommended and optimal from October through January or February in this region to utilize natural precipitation for irrigation and increase overall germination survivorship.

Operation

Upon completion of construction, operations at the site would generate approximately 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. An additional 32 trips per day were also included to account for water being trucked in for panel washing and sheep/goat grazing activity. To ensure the safety of the public and the facility, the property would be fenced, security lighting installed, and high-voltage warning signs posted. Any security lighting would be

shielded as necessary to reduce light pollution. The fence would be monitored periodically to detect any intrusion into the property.

Access to the project site would be from Scott 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. The landscape corridor installed at the entrance and along Scott Road would be maintained.

Water used during operation would be used primarily for dust control in compliance with air quality regulations. The project would also use water to wash the solar modules to optimize electrical generation. Expected maintenance personnel would consist of up to 10 individuals to assist in the washing of the solar panels, one to four times per year, depending on site conditions. Panel washing would require 14 days to complete per wash cycle. The project's annual operational demand of 10.5 AFY equates to approximately 6.6 gallons per minute, and therefore the Groundwater Study concluded that one or more of the sample boreholes that were previously drilled on the project site in the Mesozoic bedrock units would be able to support the project's yearly operational demand (see Appendix HYD-1).

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. A SCADA system would be implemented to remotely monitor the project 24 hours per day, 7 days per week during operations to monitor operations.

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

DECOMMISSIONING AND SITE RESTORATION

The planned operational life of the facility is 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 2023), which is included as Appendix PD-1 to this EIR. During decommissioning, which would be completed over approximately 12 months, 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 SWPPP.

Restoration activities would return the project site to allow for the continued agriculture use (i.e., livestock grazing only) upon decommissioning of the co-located PV solar energy generating facility, and would include the following:

- Continue to use the land for agricultural use including increasing the nutrient content to pre-construction levels and aerating the soils through regular tilling.
- Restoration of 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).
- 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 would 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. 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.

An estimated total of 253 acre-feet of water would be used for decommissioning activities over 12 months (Dudek 2023).

Areas of Known Controversy

A Notice of Preparation (NOP) was published on January 19, 2022, 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 February 8, 2022 and a public scoping meeting held on February 9, 2022. Input received as a result of the NOP and scoping meetings relate to: effects on biological resources, aquatic resources, consistency with the South Sacramento County Habitat Conservation Plan (SSHCP) implementation, impacts on endangered and threatened species and other species of concern, impacts on oak woodlands and other trees, and loss of carbon sequestration; effects on hydrology and runoff associated with project operations; archaeological, cultural and tribal cultural resources; glare; and project effects on the recreational lands. All written comments received on the NOP are provided in Appendix PD-2.

Intended Uses of the EIR

The EIR will serve as an informational document for the general public, the County of Sacramento, responsible agencies, trustee agencies, and permitting agencies. The EIR will serve as the CEQA document for responsible agency 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, consider alternatives and mitigation measures. 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, the California Department of Fish and Wildlife, the Central Valley Regional Water Quality Control Board, and SMUD. Federal agencies that may utilize this EIR in their evaluation of the project include the United States Fish and Wildlife Service and United States Army Corps of Engineers.

Table PD-6, 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-6: Subsequent Permits, Approvals, Review, and Consultation Requirements

Agency	Approval
Sacramento County Board of Supervisors	Final Environmental Impact Report Certification
Sacramento County Board of Supervisors	Use Permit, Special Development Permit, and Design Review
Sacramento County Planning Commission	Recommendation to the Board of Supervisors regarding Use Permit, Special Development Permit, and Design Review
South Sacramento Conservation Agency	Consultation with the Agency to ensure no impacts to existing South Sacramento Habitation Conservation Plan preserves
Sacramento Municipal Utility District	Various Agreements
County of Sacramento Site Improvement Section	Grading Permit or Improvement Plans
County of Sacramento Department of Transportation	Encroachment Permit
Sacramento County Environmental Management Department	On-site Wastewater Disposal Permit or Well Certification
Sacramento Metropolitan Air Quality Management District	Fugitive Dust Prevention and Control Plan, Air Quality Permits
Regional Water Quality Control Board – Central Valley Region	Section 402 National Pollutant Discharge Elimination System Permit.
Regional Water Quality Control Board – Central Valley Region	Waste Discharge Permit
California Regional Water Quality Control Board	Clean Water Act Section 401 Certification, Gen-tie Easement and related facilities including compliance with land use covenant related to Aerojet's remediation activities

Agency	Approval
California State Public Works Board	Gen-tie Easement and related facilities
California State Department of General Services	Gen-tie Easement and related facilities
California State Department of Parks and Recreation	Gen-tie Easement and related facilities, State Vehicle Recreation Area mitigation measures
California Department of Toxic Substances Control	Gen-tie Easement and related facilities including land use covenant related to Aerojet's remediation activities
U. S. Environmental Protection Agency	Gen-tie Easement and related facilities including compliance with land use covenant related to Aerojet's remediation activities
California Department of Fish and Wildlife	Lake and Streambed Alteration Agreement, California Endangered Species Act Incidental Take Permit, migratory bird and raptor provisions of California Fish and Game Code.
California Public Utility Commission	Authority to Enter into Power Purchase Agreement
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permit
U.S. Fish and Wildlife Service	Federal Endangered Species Act, Section 7 Consultation, and incidental take authorization

Note:
gen-tie generation tie

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. Vividness is related to variety, as well as contrast, adding clearly defined visual interest and memorability.
- "Intactness" is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. Intactness is related to unity and also indicates wholeness—few or no missing parts in a landscape.
- "Unity" is the visual coherence and compositional harmony of the landscape considered as a whole. Unity in a landscape provides a sense of order that translates into a feeling of well-being.

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 Land Uses

The project site consists of approximately 2,704 acres total, of which 1,412 acres are within the proposed solar development area. The site is east of Grant Line Road, south of White Rock Road, and includes land on both the east and west sides of Scott Road. Most of the project site consists of rolling hills covered with grassland and oak trees, which has historically been used as grazing land for over 80 years associated with the Barton Ranch. The Barton Ranch Headquarters, which consists of 16 buildings and structures including the ranch house along with various barns, sheds, a tankhouse, and other outbuildings, are present on the southern portion of the project site on the west side of Scott Road. A modern Verizon cell phone tower is installed adjacent to the Ranch House Headquarters. The Barton Ranch water tower is present across from the Ranch Headquarters on the east side of Scott Road. (Details related to the Barton Ranch Headquarters are provided in DEIR Chapter 8, “Cultural and Paleontological Resources.”)

The northern portion of the project site is adjacent to, and partially within, an easement over the southern end of the Prairie City State Vehicular Recreation Area (SVRA), which is owned and operated by California State Parks (State Parks) Off-Highway Motor Vehicle Division. The Prairie City SVRA encompasses approximately 1,115 acres and accommodates a variety of off-highway vehicle (OHV) activities including trail riding on a variety of terrain types; and tracks for motorcycles, all-terrain vehicles (ATVs), 4x4 vehicles, recreational OHVs, karts, and quarter midgets (State Parks 2016). The Prairie City SVRA also offers several day-use picnic areas, and overnight camping is planned in the future (State Parks 2016). The Prairie City Motocross Track is home to the Hangtown Motocross Classic, part of the Lucas Oil AMA Pro Motocross Championship Series; an event which draws over 26,000 visitors annually. Total yearly visitor attendance throughout the Prairie City SVRA in 2013 consisted of 65,004 recreational visitors and 76,697 special-event visitors, for a total of 141,701 yearly visitors (State Parks 2016). Some onsite activities at Prairie City SVRA are visible from Scott Road, including the Prairie City Motocross Track. The portion of Scott Road that is adjacent to the SVRA’s Hangtown Motocross track is just north of the project site and views of the SVRA from Scott Road are interrupted by an intervening elevated berm. OHV recreation at the 4x4 trails area can also be seen from the segment of Scott Road that is approximately 0.5 mile north of the project site.

A Teichert aggregate gravel plant is located approximately 0.75 miles southwest of the proposed switchyard and the northwestern end of the project site. Land east of the project site consists of undeveloped rolling grazing land. The southwest corner of the project site is approximately 1,000 feet from the former Sacramento Boys Ranch, which closed in 2010. The former Boys Ranch property is owned by Sacramento County and is currently not in use for any purpose.

There is a large-lot rural residence with an associated horse barn and training facilities on an elevated knoll on Pleasant Hill Lane, approximately 0.75 mile west of the second southwestern corner of the project site. Pleasant Hill Lane is accessed via Glory Lane, from Grant Line Road. Glory Lane and Pleasant Hill Lane are private roadways.

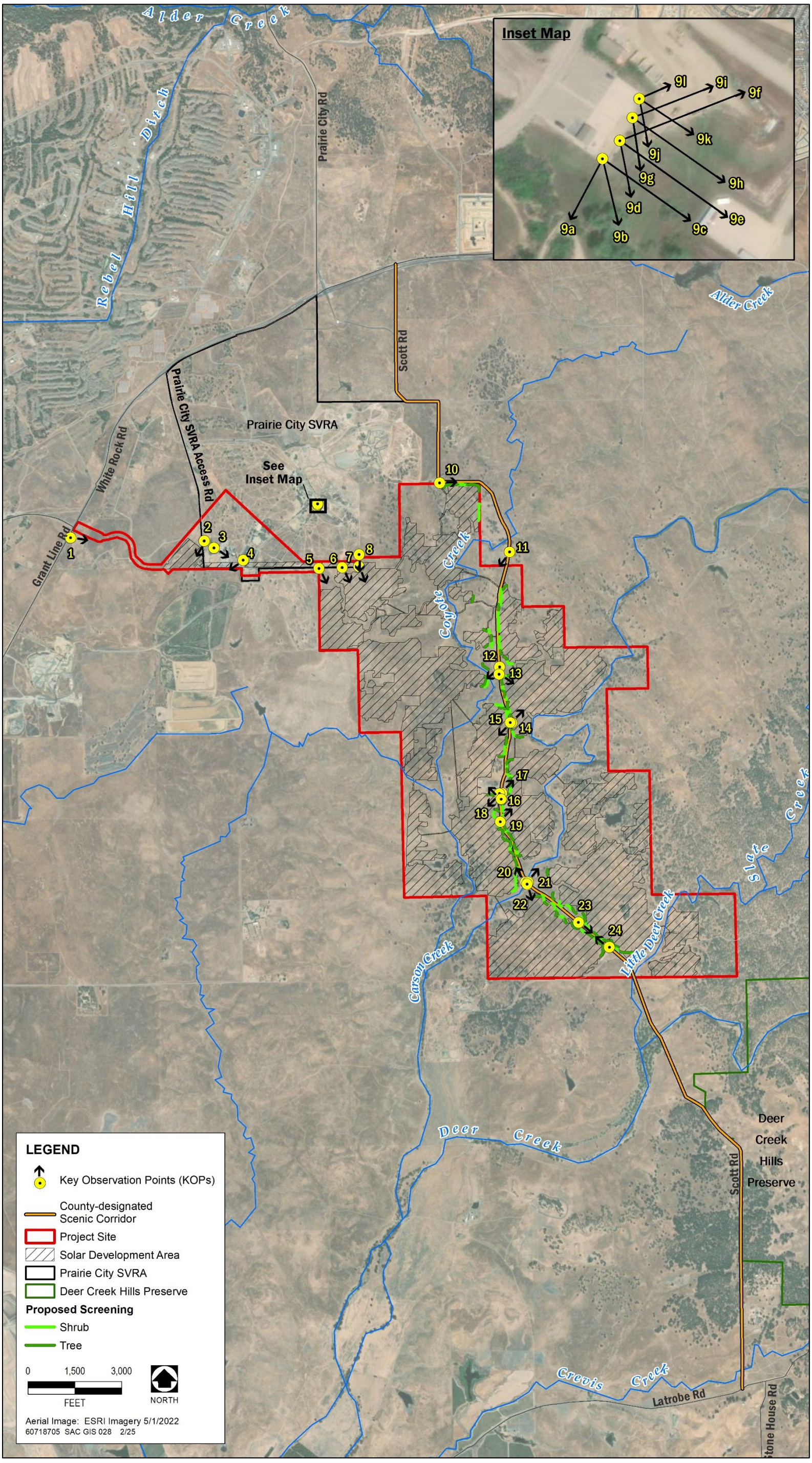
The Deer Creek Hills Nature Preserve is a 4,500-acre working cattle ranch southeast of the project site. The Preserve is only open to the public on Saturdays between 9 a.m. and 1 p.m. when staff or docents are present. Hiking and horseback riding are available on Saturdays on three trails north of Latrobe Road. Monday night mountain biking is available from July through

October on these trails. The three trails in the Preserve are approximately 1.5 miles southeast of the southern end of the project site.

Existing Visual Resources/Visual Character

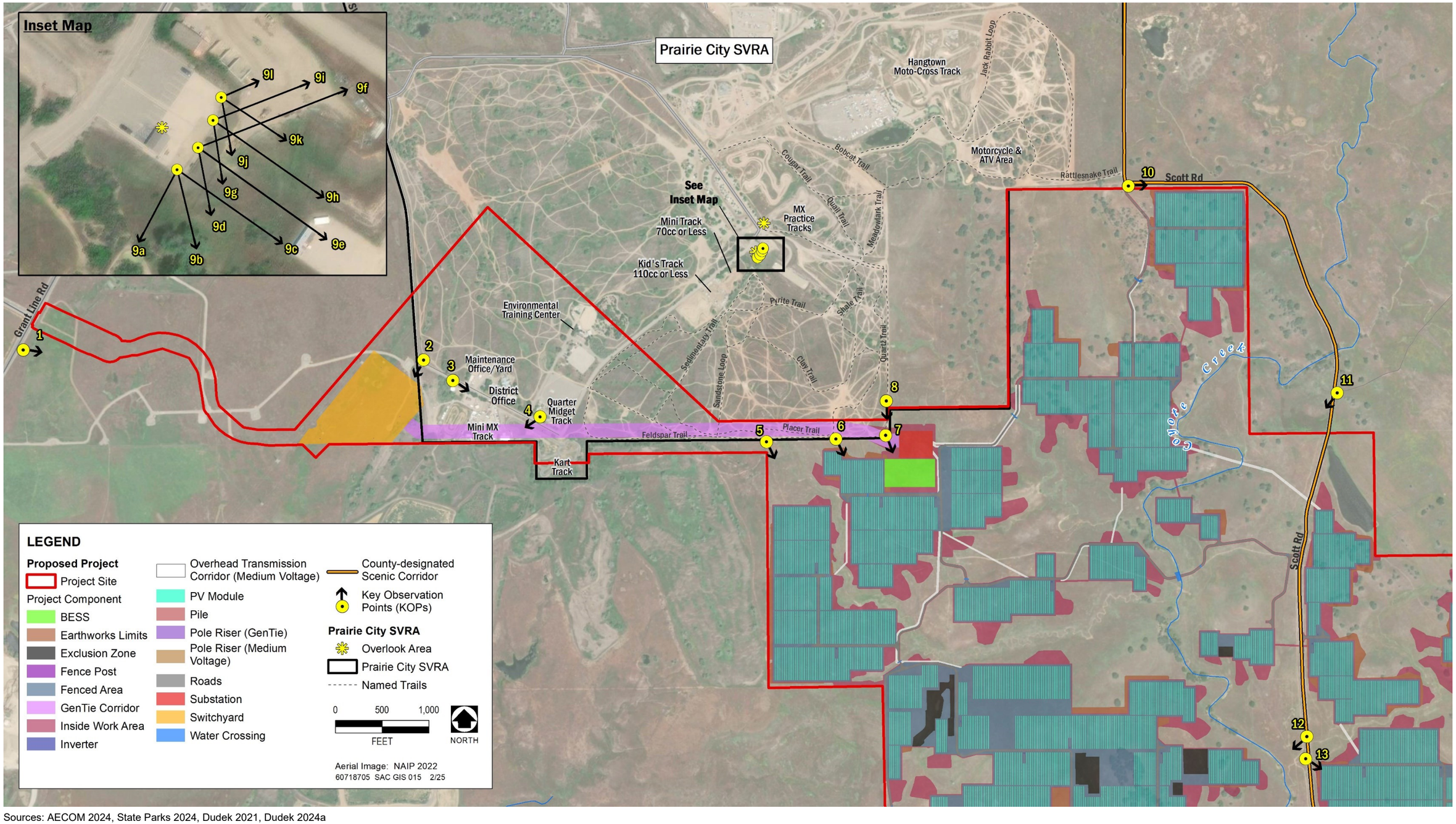
This environmental setting section provides a description of the visual character at the project site through a summary of the existing landscape characteristics. Next, the relevant key observation points (KOPs) are described in detail and photographs from each KOP, showing the existing conditions, are provided. Plate AE-1 provides an overview of the project site, the surrounding visually sensitive land uses, and the location of each of the KOPs. Plate AE-1 also shows the conceptual location of visual screening along Scott Road. Plate AE-2 is a detailed map focused on the northern half of the project site, the surrounding sensitive land uses, and the associated KOPs. Visual simulations showing the proposed condition at the project site as viewed from KOP 5 through KOP 24 are provided in the section below titled “Impacts and Analysis.”

Plate AE-1: Key Observation Points



Sources: AECOM 2024, Dudek 2021, Dudek 2024a

Plate AE-2: Key Observation Points Detail Map – Prairie City SVRA



Sources: AECOM 2024, State Parks 2024, Dudek 2021, Dudek 2024a

Visual Character and Quality

Key Observation Point 1

The northwest corner of the project site consists of open, undeveloped land east of Grant Line Road and south of White Rock Road. This area includes the northwestern end of the project's proposed access road, and the proposed switchyard site. The landform is composed of flat grassland; the distinguishing viewshed features are electrical transmission lines and a line of trees. The distinguishing distant viewshed features are the foothills of the Sierra Nevada. The viewshed illustrated in KOP 1 exhibits a moderate degree of intactness and unity, and a moderate degree of vividness; the visual quality is moderate. Viewer sensitivity in this area is high given that Grant Line Road and White Rock Road are major thoroughfares for commuters, residents, and recreationists.

Source: AECOM 2024

KOP 1. Looking East from the Grant Line Road and White Rock Road Intersection. Barbed wire fencing and grasses are visible in the foreground. Open grassland is present in the foreground and middleground. Trees along the Prairie City SVRA access road and metal towers (approximately 120 feet tall) carrying 230 kV overhead electrical lines are also visible in the middleground. The Sierra Nevada is relatively low but visible in the background.

KEY OBSERVATION POINT 2

Further to the east, near the line of trees in the background visible in KOP-1, is the site of the project's proposed switchyard and detention basin and the northwest end of the proposed gen-tie route. This area is adjacent to the Prairie City SVRA and to several groundwater treatment and monitoring wells owned and operated by Aerojet. The proposed switchyard site is approximately 300 feet southwest of the paved Prairie City SVRA access road shown in KOP 2. The area is flat, with adjacent low mounds to the southeast formed by historic dredger mine tailings. A few trees are also present. The grasses and dredge tailings have a rough textured appearance; the grass is green in the late winter and spring and brown in the summer, fall, and winter. The upright vertical lines formed by the trees, wood power poles, and the metal electrical towers that support 230 kV overhead electrical lines are the dominant visual pattern elements. The electrical towers are approximately 120 feet tall. The viewshed illustrated in KOP-2 exhibits a low degree of intactness and unity, and a low degree of vividness; the visual quality is low. Visual sensitivity is low for recreationists who use this road to access Prairie City SVRA facilities.

Source: AECOM 2024

KOP 2. Looking Southwest from the Prairie City SVRA Access Road. Fencing, wood power poles and overhead power lines, scattered trees, and grassland are visible in the foreground, along with pavement on the Prairie City SVRA access road. A small, fenced area associated with an Aerojet groundwater remediation well is visible in the middleground. Metal towers, approximately 120 feet tall, carrying 230 kV overhead electrical lines are visible in the middleground. Trees to the southwest are visible in the background.

KEY OBSERVATION POINT 3

A variety of facilities are present at the southern end of the Prairie City SVRA along both sides of the existing Prairie City SVRA access road, which would also be used for project site access and a portion of the proposed gen-tie route. The Prairie City SVRA road is paved, and there are one-story buildings, paved parking areas, and facilities such as the SVRA's Corporation Yard, water supply well and treatment plant, water storage tank, etc. on the north and south sides of the road (KOP 3). The south side of the road also includes several paved parking areas and one-story buildings associated with the Prairie City Kart Track, and the dirt Prairie City Flat Track. Paved parking and the paved American Quarter Midget Association track are on the northeast end of the paved access road in the project vicinity. The viewshed in this area consists primarily of diverse manmade elements of differing forms and textures, with a mixture of both horizontal and vertical elements. The viewshed illustrated in KOP 3 exhibits a low degree of intactness, unity, and vividness; the visual quality is low. Given the number and disparate nature of the existing visual elements in this viewshed, visual sensitivity is low for recreationists who use this road to access Prairie City SVRA facilities.

Source: AECOM 2024

KOP 3. Looking Southeast along the Prairie City SVRA Access Road and a Portion of the Proposed Gen-Tie Route. Pavement comprising the Prairie City SVRA access road, along with different kinds of fencing, wood power poles and overhead power lines, trees, a water storage tank, one-story metal buildings, and metal overhead light standards, are visible in the foreground and middleground.

KEY OBSERVATION POINT 4

As discussed in Chapter 2, “Project Description,” the Prairie City Kart Track would require modifications as part of the proposed project. The existing Kart Track and the adjacent area to the northwest are shown in KOP 4. (The track is in the same area as the facilities shown in KOP 3.) As shown in KOP 4, the track is located on flat land immediately adjacent to the SVRA’s paved access road. The track itself is paved and is surrounded on the outside by red and white barriers that help to protect drivers and keep the karts from going off the track if a crash were to occur. A portion of the bleachers, pit area, and track office are also visible in KOP 4. In addition to the Kart Track, this area also includes a variety of temporary storage buildings (with metal or cloth roofs), vehicle parking, and RV storage. Overhead high-mast lighting at the adjacent Mini MX Track (to the northwest) is also visible. The viewshed in the area of KOP 4 consists primarily of diverse manmade elements of differing forms and textures, with a mixture of both horizontal and vertical elements. Given the number and nature of disparate elements in the viewshed in KOP 4, it exhibits a low degree of vividness, intactness, and unity, and the visual quality is therefore low.

AECOM 2024

KOP 4. Looking Southwest at a Portion of the Prairie City Kart Track, from the Prairie City SVRA Access Road. Pavement along the Prairie City SVRA access road, fencing, signage, and the northern end of the Kart Track, along with its distinctive red and white barriers are visible in the foreground. Middleground views include a portion of the track’s metal bleacher seating, cloth-covered pavilions (both white and red), gray and white metal storage buildings, vehicles, RVs, and overhead high-mast light standards, along with a line of tall landscape trees.

KEY OBSERVATION POINTS 5 THROUGH 8

Approximately 2,100 feet east of KOP 4, the project site boundary turns south; KOP 5 provides a view from the Prairie City SVRA property on the Quartz and Placer OHV Trails from this location looking south. This area is frequently used by OHVs on dirt trails that traverse the rolling topography. The distance between OHV trails and the project site in this area ranges from immediately adjacent to the project site as shown in KOP 5, to approximately 1,700 feet north (see Plate AE-2). KOP 6 provides a view approximately 735 feet further east from KOP 5, also looking south, at the point where the proposed solar panels would be closest to the SVRA's Quartz and Placer Trails adjacent to the property boundary. KOP 7 is approximately 525 feet farther east, at the corner of the SVRA property boundary on the Quartz Trail, again looking south but towards the proposed substation (see Plate AE-2). KOP 8 is approximately 480 feet further north along the Prairie City SVRA eastern boundary (see Plate AE-2), showing the existing conditions view of the landform texture. The grassland is green in the early winter and spring, and brown in the summer, fall, and winter. The viewsheds exhibit a high degree of continuity. The viewsheds illustrated in KOP 5, KOP 6, and KOP 8 exhibit a high degree of intactness and unity, and a moderate degree of vividness; the visual quality is moderate. The KOP 7 viewshed exhibits a high degree of intactness, unity, and vividness; the visual quality is generally high. Viewer sensitivity for recreationists is high on the OHV trails in the areas shown in KOP 5 through KOP 8, as well as the OHV trails up to 1,700 feet to the northwest which are open and provide expansive views of these project areas for recreationists within the SVRA (see Plate AE-2).

Source: Dudek 2024a

KOP 5. Looking Southeast from the Prairie City SVRA Quartz and Placer Trails along the SVRA Southern Boundary. Fencing along the Prairie City SVRA boundary and the SVRA dirt (OHV) Quartz Trail is present in the foreground, along with grassland (on the other side of the fence) at the project site. Gently rolling hills covered with grassland, and scattered trees on the project site are visible in the middleground. The Sierra Nevada is visible in the background, along with metal towers (approximately 120 feet tall) supporting 230 kV overhead electrical lines.

Source: Dudek 2024a

KOP 6. Looking Southeast from the Prairie City SVRA Quartz and Placer Trails along the SVRA Southern Boundary. Gently rolling hills on the project site covered with grassland are visible in the foreground and middleground. The Sierra Nevada, along with some trees, are visible in the background.

Source: Dudek 2024a

KOP 7. Looking Southwest from the Prairie City SVRA Quartz Trail at the SVRA Southeast Boundary. Fencing along the Prairie City SVRA boundary and grassland are visible in the foreground. Gently rolling hills on the project site covered with grassland, grazing cows, and scattered trees are visible in the middleground and background. The Sierra Nevada is visible in the background, along with a prominent metal tower transmission line tower (approximately 120 feet tall) supporting 230 kV overhead electrical lines.

Source: Dudek 2024a

KOP 8. Looking South from the Prairie City SVRA Quartz Trail. Fencing along the Prairie City SVRA boundary, grassland, and the dirt (OHV) Quartz Trail are visible in the foreground. Gently rolling hills on the project site covered with grassland and scattered trees are visible in the middleground and background. A prominent metal transmission line tower (approximately 120 feet tall) supporting 230 kV overhead electrical lines is also visible in the background.

KEY OBSERVATION POINTS 9A THROUGH 9L

Continuing on the Prairie City SVRA paved access road for approximately 0.5 miles east from KOP 4, past the Environmental Training Center, a paved parking area with shaded picnic tables on a high plateau is available for SVRA recreationists. This recreational facility has been identified by State Parks as an overlook area (State Parks 2024). This overlook area provides expansive scenic views of the Sierra Nevada to the north and east, along with gently rolling grassland and trees to the south and southwest.

KOP 9a through KOP 9l are photos from different locations and in different directions from the overlook area. OHV trails in the SVRA are present traversing the viewshed through rolling topography that is vegetated with grassland and scattered trees. The tall late summer grasses and oak trees present a coarse textural appearance. The immediate foreground of some of the views from this overlook include the characteristic post and wire fencing that is prevalent throughout the SVRA, multiple heavy construction vehicles in a temporary staging/storage area, and an apparent basin feature (both the vehicle staging/storage area and the basin feature are within a SVRA closed area per the Prairie City SVRA Map). The viewsheds illustrated in KOP 9a through 9l exhibit a moderate degree of intactness, unity, and vividness; the visual quality is moderate. Viewer sensitivity for recreationists using this facility is also high.

Source: AECOM 2024

KOP 9a. Looking Southwest from the Prairie City SVRA Picnic Area/Overlook east of the Environmental Training Center. Grassland, shrubs, and scattered trees are visible in the foreground. Grassland, scattered trees, an unlined ditch, the SVRA Mini Track, and a parking area are visible in the background. Additional grassland, scattered trees, and utility poles are visible in the distant background.

Source: AECOM 2024

KOP 9b. Looking South from the Prairie City SVRA Picnic Area/Overlook. Trees and shrubs and unimproved roads and fencing associated with the Prairie City SVRA in the foreground. Rolling hills and grassland in the middleground and foothills in the background.

KOP 9c. Looking Southeast from the Prairie City SVRA Picnic Area/Overlook east of the Environmental Training Center. Trailers, power poles, concrete, and other improvements associated with the former shooting range are in the foreground. Oak woodlands and rolling grassland is in the middleground and the Sierra Nevada foothills and Sierra Nevada are visible in the background.

KOP 9d. Looking South/Southwest from the Prairie City SVRA Picnic Area/Overlook. Bushes, trees, and improvements associated with the former shooting range visible in the foreground, rolling grassland in the middleground, and oak woodlands, foothills, and the Sierra Nevada visible in the background.

KOP 9e. Looking Southeast from the Prairie City SVRA Picnic Area/Overlook. Prairie City SVRA signage and improvements associated with the former shooting range visible in the foreground; oak woodlands, rolling grassland, and utility poles in the middleground; and foothills and the Sierra Nevada visible in the background.

KOP 9f. Looking East/Northeast from the Prairie City SVRA Picnic Area/Overlook. Grassland, shrubs, and a wire fence are visible in the foreground. A construction staging yard containing heavy construction equipment, metal piping, and other miscellaneous objects is visible in the background. Additional grasslands, scattered trees, buildings, and the rolling hills of the Sierra Nevada are visible in the background.

KOP 9g. Looking South from the Prairie City SVRA Picnic Area/Overlook. Bushes, trees, and improvements associated with the former shooting range visible in the foreground, rolling grassland and trees in the middleground, and oak woodlands, foothills, and the Sierra Nevada visible in the background.

KOP 9h. Looking Southeast from the Prairie City SVRA Picnic Area/Overlook. Construction equipment and improvements associated with the former shooting range in the foreground; oak woodlands, trees, rolling grassland and utility poles in the middleground; and trees, foothills, and the Sierra Nevada visible in the background.

KOP 9i. Looking East/Northeast from the Prairie City SVRA Picnic Area/Overlook. A construction staging yard containing heavy construction equipment, metal piping and other miscellaneous objects is visible in the foreground and middleground. Grasslands, scattered trees, buildings, and the rolling hills of the Sierra Nevada are visible in the background.

KOP 9j. Looking South from the Prairie City SVRA Picnic Area/Overlook. Trees and improvements associated with the former shooting range in the foreground, rolling grassland and trees in the middleground, and oak woodlands, foothills, and the Sierra Nevada visible in the background.

KOP 9k. Looking Southeast from the Prairie City SVRA Picnic Area/Overlook. Construction equipment in the foreground and middleground. Grasslands, scattered trees, buildings, and the rolling hills of the Sierra Nevada are visible in the background.

KOP 9I. Looking East from the Prairie City SVRA Picnic Area/Overlook. Construction equipment and the Prairie City motocross track in the foreground and middleground. Grasslands, scattered trees, buildings, and the rolling hills of the Sierra Nevada are visible in the background.

KEY OBSERVATION POINTS 10 THROUGH 24

The southern portion of the project site consists of rolling hills covered with grassland, which is used for cattle grazing. The Barton Ranch Headquarters, which consists of 16 facilities including a white, two-story ranch house with associated outbuildings such as barns and sheds, are present on the project site adjacent to Scott Road. A Verizon cell tower is adjacent to the ranch house. The facilities associated with the Barton Ranch Headquarters and the Verizon cell tower are visible from Scott Road. Several creeks are present in the valleys that provide drainage for the southern portion of the project site, including Coyote Creek, Carson Creek, and Little Deer Creek, along with numerous small tributaries thereto. Most of the drainages only carry water during winter storm events. In wet years, Carson Creek contains water year-round, and the main stem of Coyote Creek contains water year-round in standing pools. Scattered oak trees and oak woodland are present throughout the southern portion of the project site, primarily along the drainages. Riparian woodland/forest communities, which include both shrubs and trees, are also present along some of the drainages. The only public viewpoints of the southern portion of the project site are from Scott Road. Solar panels and internal dirt/gravel access roads are proposed along an approximately 2.8-mile stretch of Scott Road, which bisects the project site from north to south. The General Plan establishes that the County will "[c]ontinue to provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road," and a portion of the segment of Scott Road where the County will continue to provide scenic corridor protection under Policy CI-58 is within the project site (Sacramento County 2022a: Circulation Element). KOP 10 through KOP 23 provide views of existing conditions in late summer along Scott Road through the project site, from north to south. The landforms in KOP 10 through KOP 23 are gently rolling. The vertical dark green elements of the oak trees provide a high degree of contrast with the horizontal brown grassland element. The viewsheds exhibit a coarse texture. The grasslands are green in the late winter and early spring, and brown in the summer, fall, and winter. The viewsheds illustrated in KOP 10 through KOP 24 exhibit a high degree of intactness, unity, and vividness; the visual quality is high. Viewer sensitivity for motorists traveling along Scott Road is also high.

Source: Dudek 2021

KOP 10. Looking East from Scott Road east of Prairie City SVRA. Pavement on Scott Road, signage, fencing, grassland, and oak trees on the project site are visible in the foreground. Grassland, and scattered trees off the project site are visible in the foreground and middleground to the north (on the left side of photograph). The Sierra Nevada foothills are visible in the background.

Source: Dudek 2021

KOP 11. Looking South from Scott Road. Pavement on Scott Road, signage, fencing, grassland, and oak trees on the project site are visible in the foreground and middleground.

Source: Dudek 2021

KOP 12. Looking Southwest from Scott Road. Fencing along Scott Road, and grassland and oak trees on the project site are visible in the foreground and middleground.

Source: Dudek 2021

KOP 13. Looking Southeast from Scott Road. Fencing along Scott Road, and grassland and oak trees on the project site are visible in the foreground and middleground.

Source: Dudek 2021

KOP 14. Looking Northeast from Scott Road. Fencing along Scott Road, and grassland and oak trees on the project site are visible in the foreground and middleground.

Source: Dudek 2021

KOP 15. Looking Southwest from Scott Road. Fencing along Scott Road, and grassland and oak trees on the project site are visible in the foreground and middleground.

Source: AECOM 2024

KOP 16. Looking Northwest from Scott Road. Metal fencing and gates, grassland, and asphalt pavement along Scott Road are visible in the foreground, along with a cell tower and buildings, white fencing, and landscape trees associated with the Barton Ranch Headquarters.

Source: Dudek 2021

KOP 17. Looking Northeast from Scott Road near the Barton Ranch Headquarters. Fencing along Scott Road, and grassland and oak trees on the project site are visible in the foreground and middleground. The Sierra Nevada foothills are visible in the background.

Source: Dudek 2021

KOP 18. Looking Southwest from Scott Road near the Barton Ranch Headquarters. Grassland on the project site is visible in the foreground and middleground and oak trees are visible in the middleground. Metal towers (approximately 120 feet tall) with 230 kV overhead electrical lines are visible in the background.

Source: Dudek 2021

KOP 19. Looking Northeast from Scott Road**.** Grassland, oak trees, and fencing on the project site are visible in the foreground and middleground, along with pavement and fencing along Scott Road.

Source: Dudek 2021

KOP 20. Looking Northeast from Scott Road. The Scott Road bridge overcrossing and the Carson Creek streambed (dry in this photograph) comprise all of the foreground and a portion of the middleground. Grassland and oak trees on the project site are visible in the middleground.

Source: Dudek 2021

KOP 21. Looking Southwest on the south side of Carson Creek from Scott Road. Pavement on Scott Road and the Carson Creek bridge overcrossing are visible in the foreground, along with a portion of the Carson Creek streambed (dry in this photograph) and bridge abutment. Wood power poles with overhead electrical lines are also visible in the foreground. Grassland and oak trees on the project site are visible in the middleground.

Source: Dudek 2021

KOP 22. Looking Northwest on the north side of Carson from Scott Road. Pavement on Scott Road and the Carson Creek bridge overcrossing are visible in the foreground, along with wood power poles with overhead electrical lines. Grassland and oak trees on the project site are visible in the foreground and middleground.

Source: Dudek 2021

KOP 23. Looking from Scott Road. Pavement and fencing along Scott Road are visible in the foreground. Grassland and oak trees on the project site are visible in the foreground and middleground.

Source: Dudek 2021

KOP 24. Looking Northeast from Scott Road at Boys Ranch Road. Pavement and fencing along Scott Road are visible in the foreground. Grassland and oak trees on the project site are visible in the foreground and middleground.

Designated Scenic Roadways

The California Department of Transportation (Caltrans) manages the State Scenic Highway Program and assists local communities seeking to officially designate state scenic highways. There are no designated or eligible state scenic highway adjacent to or in the vicinity of the project site. The nearest state-designated scenic highway is U.S. 50 near Placerville, approximately 20 miles northeast of the project site. The nearest state-eligible scenic highway is State Route 49, approximately 16 miles east of the project site (Caltrans 2019, 2024). Due to the intervening distance, topography, and vegetation, the project site is not visible from either of these roadways.

Sacramento County has designated certain roadway segments as scenic highways or scenic corridors as part of its General Plan. Local policies relevant to aesthetics are contained in the General Plan Circulation Element. General Plan Policy CI-58 establishes that the County will "[c]ontinue to provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road…" (Sacramento County 2022a, page 41).

As discussed above, the project site is located along Scott Road, generally south of the existing Prairie City SVRA. As shown in KOP 10 through KOP 24, approximately 2.8 miles of Scott Road bisect the southern portion of the project site from north to south. Scott Road is a two-lane asphalt paved road. The project site is also visible from portions of Scott Road further north and south of the project site due to the rolling topography. When traveling south on Scott Road from the north, when the project site becomes visible, also visible to the south and east is fencing and a sign for Gate 5 associated with the Prairie City SVRA. The existing viewshed along Scott Road is described above under the heading "Key Observation Points 10 through 24."

Scott Road first appeared on early survey maps of the area in 1855. It originated as a Gold Rush-era wagon road that facilitated traffic from the "Placerville and Sacramento Road" (today's White Rock Road) to mining camps near the Cosumnes River such as Live Oak and Michigan Bar. Newspaper reports from 1898 identify it as the "Folsom and Live Oak Road." The road later served eastern Sacramento County farmers and ranchers and became identified by its principal destination, Scott Ranch, a cattle ranch established by John P. Scott on the south side of Deer Creek. Scott Road was paved sometime after 1936 (ECORP Consulting, Inc. 2024).

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. Daytime glare can also result in hazards for nearby recreationists and residents. Information related to existing nearby airports is provided below for context related to the glare analysis.

The runways at the publicly-owned Sacramento Mather Airport are approximately 6.3 miles southwest of the proposed switchyard, and approximately 7.3 miles southwest of the proposed substation, at 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 jets (AirNav 2024a).

The privately-owned Rancho Murieta Airport is approximately 4.5 miles south of the project site. 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 a.m. to 5 p.m. daily. Rancho Murieta Airport has two lighted asphalt runways that are approximately 3,800 feet and 1,150 feet long, respectively. In 2023, there were 22 aircraft based at the field, and there were approximately 22 flights per day averaged over the 12-month period (AirNav 2024b).

The project site is mostly undeveloped. Minor sources of existing light and glare consist of security lighting associated with the on-site ranch house in the southern portion of the project site, and security lighting associated with buildings along the Prairie City SVRA access road. However, the OHV tracks on both sides of the Prairie City SVRA access road through the project site are equipped with high-mast lighting for nighttime use, and there are overhead light standards along this portion of the SVRA access road.

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.

Federal Aviation Policy: Review of Solar Energy System Projects (Rule 86 FR 25801)

Although solar energy systems are designed to absorb solar energy to maximize electrical energy production or the heating of water, in certain situations the glass surfaces of the solar energy systems can reflect sunlight and produce glint (a momentary flash of bright light) and glare (a continuous source of bright light). In 2013, the FAA issued an interim policy that required federally-obligated airports to conduct an ocular analysis of potential glint and glare effects to

pilots on final approach and air traffic control tower (ATCT) cabs[1] before construction begins. The FAA subsequently concluded that in most cases, the glint and glare from solar energy systems to pilots on final approach is similar to glint and glare pilots routinely experience from water bodies, glass-façade buildings, parking lots, and similar features. However, FAA has continued to receive reports of potential glint and glare effects from on-airport solar energy systems on personnel working in ATCT cabs. Therefore, the FAA determined that the scope of agency policy should be focused on the impact of on-airport solar energy systems to federally-obligated towered airports, specifically the airport's ATCT cab. Thus, the FAA withdrew the previous interim guidance and issued Rule 86 FR 25801 in May of 2021, which requires no glare of any kind for ATCTs at cab height. Rule 86 FR 25801 only applies to proposed solar energy systems on federally obligated airport property and only those airports with control towers. The proposed project is not located on airport property. Although this rule does not apply to the proposed project, FAA Rule 86 FR 25801 encourages project proponents to consider ocular impacts for proposed systems in proximity to airports with ATCTs (FAA 2021), and therefore a glare analysis for both Sacramento Mather Airport and the Rancho Murietta Airport was conducted for the proposed project.

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.

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 2022) was adopted by the Sacramento County Association of Governments, which serves as the Sacramento ALUC, in 2022. 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

[1] 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.

airspace protection and overflight notification areas. Mather Airport ALUCP policy AP-6, "Other Flight Hazards," states as follows (ESA 2022:4-46):

> ***AP-6 OTHER FLIGHT HAZARDS***
>
> Land uses that may cause visual, electronic, or wildlife hazards, particularly bird strike hazards, to aircraft in flight or taking off or landing at each Airport shall be allowed within the AIA only if the uses are consistent with FAA rules and regulations.
>
> 1) Specific characteristics to be avoided include:
>
>   a) 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);
>
>   b) Distracting lights that could be mistaken for airport lights;
>
>   c) Sources of dust, steam, or smoke that may impair pilot visibility;
>
>   d) Sources of electrical interference with aircraft communications or navigation; and
>
>   e) Any proposed use that creates an increased attraction for wildlife.

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 4 miles north of the airport's safety restriction area.

SACRAMENTO COUNTY GENERAL PLAN

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2022a) includes the following policies related to aesthetics that apply to the proposed project.

LAND USE ELEMENT

Policy 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

Policy 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.

CIRCULATION ELEMENT

Policy CI-52. Fully enforce all sign controls in the scenic corridors.

Policy CI-53. Roadway improvements along established scenic corridors shall be designed and constructed so as to minimize impacts to the scenic qualities of the corridor.

Policy CI-58. Continue to provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road, Michigan Bar Road, and Twin Cities Road from Highway 160 east to Highway 99.

Policy CI-60. Encourage maintenance of natural roadside vegetation and landscaping with native plants which usually provide the best habitats for native wildlife.

SACRAMENTO COUNTYWIDE DESIGN GUIDELINES

The *Sacramento Countywide Design Guidelines* (Sacramento County 2022b) 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 2022b):

- 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, 6.3, and 7.3

Sacramento County Zoning Code Section 3.6.6.C, Solar Energy Facilities, sets forth the following standards for commercial solar facilities that apply to the proposed project. As stated in Section 3.6.6.C.3, when siting commercial solar facilities, the following factors shall be considered:

c. Location

(iii) Avoid locations in the viewscapes of scenic highways or in areas that would impact the views from historic places.

(v) Solar facilities shall not be allowed where it has been determined the facility will adversely impact airport flight operations, including military flight paths.

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 2022b). 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.

Sacramento County Zoning Code Section 7.3 defines "scenic highway" as "A highway so designated by the State of California, pursuant to provisions of the California Streets and Highway Code."

Section 7.3 defines "scenic corridor" as:

> A strip of land on each side of a stream or roadway which is generally visible to the public traveling on such route. The scenic corridor for a freeway shall include a horizontal distance of 1,000 feet from the center of the freeway. The scenic corridor for a scenic highway or scenic country route shall include a horizontal distance of 500 feet on each side of the center line with a minimum distance of 300 feet beyond the right-of-way or the edge of the stream. A Scenic Corridor is the same as a Special Sign Corridor.

Section 7.3 defines "scenic county route" as:

> A County road, State highway, or navigable river which is part of a scenic travel system within Sacramento County and so designated by the Board of Supervisors.

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- or County-designated scenic highway;
- in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

IMPACT AE-1: HAVE A SUBSTANTIAL ADVERSE EFFECT ON A SCENIC VISTA

DEER CREEK HILLS PRESERVE

The Deer Creek Hills Preserve provides scenic vistas of rolling grasslands, blue oak woodlands, creeks, and (from some locations) the Sierra Nevada. The trails available for public use at the Deer Creek Hills Preserve are approximately 1.5 miles southeast of the closest solar panels at the project site along Scott Road north of the Preserve and an approximately 1,000-foot-long segment of Payen Road north of the Preserve (see Plate AE-1). The topography at the Preserve primarily consists of gently rolling hills. Even at the highest elevation points on the designated public-use trails in the Preserve, there are intervening ridgelines which are substantially higher than the trails. Therefore, due to the intervening rolling topography and oak woodlands, proposed solar panels and other project components would not be visible to recreationists in the Preserve. Thus, there would be **no impact** on scenic vistas from the Preserve.

PRAIRIE CITY SVRA

As described in the Environmental Setting, State Parks has designated an existing picnic area on top of an elevated knoll within the Prairie City SVRA as an Overlook (State Parks 2024). As shown in KOP 9a through KOP 9e existing conditions photos, depending on the direction of view from the Overlook, existing views from the Prairie City SVRA Overlook towards the project site comprise rolling grassland in the foreground and middleground, and the Sierra Nevada in the background. Looking south, the view is of trees and other vegetation, fencing and other improvements associated with the SVRA. Looking southeast, the view is of trees between the SVRA property and the project site, and rolling grassland on and off the project site. Looking east, the foreground view is of a former shooting range on the SVRA property and trees and rolling grassland in the middleground, and tree-covered foothills and the Sierra Nevada in the background. Looking northeast, foreground views are of fencing, portions of tracks, and other improvements associated with the SVRA and, at the time of the viewshed photos, stored construction equipment, with middleground views comprising trees and rolling grasslands, and tree-covered foothills and the Sierra Nevada in the background. The viewshed from the Overlook exhibits a high degree of vividness, intactness, and unity, and therefore the existing visual quality is also high. For the recreationists visiting this portion of the Prairie City SVRA, the viewer sensitivity is high. As shown in Visual Simulation 1: KOP 9a, with project implementation the viewshed in the middleground would include solar panel development that would become visually prominent. The project substation would also be partially visible in the view to the south of the light green grouping of trees in the foreground. With project implementation, the intactness and unity in the viewshed of KOP-9a would change from high to low, and therefore the visual quality would also change from high to low.

Other scenic views of the project site are available from other locations on the OHV trails throughout the southern portion of the Prairie City SVRA (see Plate AE-2). For example, KOPs 5 through 8 provide views to the southwest and southeast from the Quartz and Placer Trails. The viewshed from these trails towards the project site exhibits a high degree of vividness, intactness, and unity, and therefore the existing visual quality is also high. Viewer sensitivity for recreationists using this facility is high.

As shown in Visual Simulations 2 and 3, although the background views of the Sierra Nevada would be preserved, with project implementation the middleground views would change such as although some rolling grassland would still be present, the solar panels would be visually

prominent. As shown in Visual Simulations 4 and 5, with project implementation the viewshed in the foreground and middleground would consist of the proposed substation, and the foreground and middleground views of undeveloped rolling hillsides would consist partially of substation and solar panels, and partially of grassland-covered low hillsides. Limited views of the Sierra Nevada in the background would be available through the substation facilities. With project implementation, the vividness, intactness, and unity in the viewsheds of KOPs 5 through 8 would change from high to low, and therefore the visual quality would also change from high to low.

Source: Dudek 2023

Visual Simulation 1: KOP 9a Looking Southeast from the Prairie City SVRA Access Road Near the Overlook, north of the Environmental Training Center. Rolling grassland and scattered trees on the Prairie City SVRA in the foreground and at the project site would continue to be visible in the foreground. Discontinuous blocks of proposed solar panels would be visible on select hillsides in the broad middleground landscape. New metal power poles with overhead power lines would also be visible at the back corner of the proposed substation (in the right side of the photo). Background views of the Sierra Nevada foothills would continue to be visible and would not be obstructed or substantially interrupted by visible project components.

Source Dudek 2024a

Visual Simulation 2: KOP 5: Looking Southeast from the Prairie City SVRA Quartz and Placer Trails along the SVRA Southern Boundary. Fencing along the Prairie City SVRA boundary and the SVRA dirt (OHV) Quartz Trail would continue to be present in the foreground, along with grassland (on the other side of the fence) at the project site. The middleground views of grass-covered hills would remain, and a portion of the middleground view would consist of solar panels. The Sierra Nevada would continue to be visible in the background, along with metal towers (approximately 120 feet tall, which appear very small at this distance) supporting 230 kV overhead electrical lines.

Source: Dudek 2024a

Visual Simulation 3: KOP 6: Looking Southeast from the Prairie City SVRA Quartz and Placer Trails along the SVRA Southern Boundary. Gently rolling hills on the project site covered with grassland and scattered trees would continue to be visible in the foreground. The nearest solar panels in the foreground, at a distance of 125 feet, would be blocked from this viewpoint by a short flat plateau followed by a decrease in topography between the Quartz/Placer Trails and the panels. Remaining views in the foreground and portions of the middleground views of undeveloped grassland would be altered by the introduction of solar panels. The Sierra Nevada would continue to be visible in the background.

Source: Dudek 2024a

Visual Simulation 4: KOP 7: Looking South from the Prairie City SVRA Quartz Trail at the SVRA Southeast Boundary. Following construction, the proposed substation and solar panels would be visible in the foreground and middleground. Some of the rolling hill topography would be detectable beyond the substation, but select hills would be covered with solar panels. The Sierra Nevada would continue to be visible in the background through the substation facilities.

Source: Dudek 2024a

Visual Simulation 5: KOP 8: Looking Southwest from the Prairie City SVRA Quartz Trail. Fencing along the Prairie City SVRA boundary, grassland, and the dirt (OHV) Quartz Trail would continue to be visible in the foreground. Foreground views of the project site would include the proposed substation, with grassland to the east and west. The existing 230kV metal transmission line tower (approximately 120 feet tall) would still be partially visible in the background behind the substation.

The changes in vividness, intactness, and unity from high to low in portions of these viewsheds, which are representative of some views across the project site available from the southwestern portion of the Prairie City SVRA (see Plate AE-2), would result in a change in visual quality from high to low. The changes in vividness, intactness, and unity from high to low in these viewsheds, which are representative of the views in portions of the southwestern portion of the Prairie City SVRA (see Plate AE-2), would result in a change in visual quality from high to low. Therefore, implementation of the proposed project would result in a substantial adverse effect on multiple scenic vistas from within the Prairie City SVRA, which has a high level of visual sensitivity for recreational visitors. This impact is **significant**.

Mitigation Measures

Based on the elevated position of the trails in the southern half of the SVRA as compared to the lower elevation of solar array and substation, mitigation measures such as landscape screening would not reduce views of solar infrastructure from the SVRA. The implementation of screening would also not successfully screen the project substation from view. Thus, it was determined that landscape screening would not substantially improve the user experience and no other feasible mitigation measures are available.

Significance after Mitigation

Because there are no feasible mitigation measures available to reduce the project's significant impact from substantial adverse effects on scenic vistas as viewed from the Prairie City SVRA, this impact is **significant and unavoidable**.

Impact AE-2: Substantially Damage Scenic Resources Within a State- or County-Designated Scenic Highway

Potential Damage to Historic Features

As described in the Environmental Setting and shown in KOP 16, the Barton Ranch Headquarters consists of 16 buildings and structures, 15 of which are on the west side of Scott Road; the Barton Ranch water tower is on the east side of Scott Road. An existing cell tower is directly adjacent to the ranch structures. The buildings and cell tower are plainly visible to motorists on Scott Road traveling in both north and south directions. A detailed analysis was performed by ECORP Consulting, Inc. (ECORP) in 2024 to evaluate the potential for listing of the Barton Ranch Headquarters on the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR). The Barton Ranch Headquarters (which was evaluated as both individual features and collectively as a district for historic resources purposes) was found to be not eligible for listing on either the NRHP or the CRHR (ECORP 2024). Because the Barton Ranch Headquarters provide historic evidence related to ranching in the project area, and the buildings are well maintained, it forms a part of the scenic viewshed along the Scott Road Scenic Corridor. Solar panels would partially obstruct the foreground view shown in KOP 16, and would be installed within 85 feet of the ranch buildings. However, the buildings would not be removed as part of the proposed project, and therefore would continue to be part of the viewshed from Scott Road.

ECORP (2024) also reviewed other potential historic resources in the project area. The Caltrans Local Bridge No. 24C0238 carries Scott Road over Carson Creek through the project site. It was

constructed in 1979 and was evaluated by Caltrans as a Category 5 bridge that is not eligible for the NRHP (ECORP 2024:21).

ECORP (2024) also performed an analysis of the segment of Scott Road that runs through the project site to determine its potential significance as a historical resource. Scott Road was found to be not eligible for listing on either the NRHP or the CRHR (ECORP 2024:70-71). Similarly, Payen Road—a dirt road that travels east from Scott Road at the southern end of the project site—was also found to be not eligible for listing on either the NRHP or the CRHR (ECORP 2024:72-73).

Therefore, the proposed project would not result in changes to existing historic features associated with the Scott Road Scenic Corridor, and thus there would be **no impact** from substantial damage to historic resources within a scenic corridor.

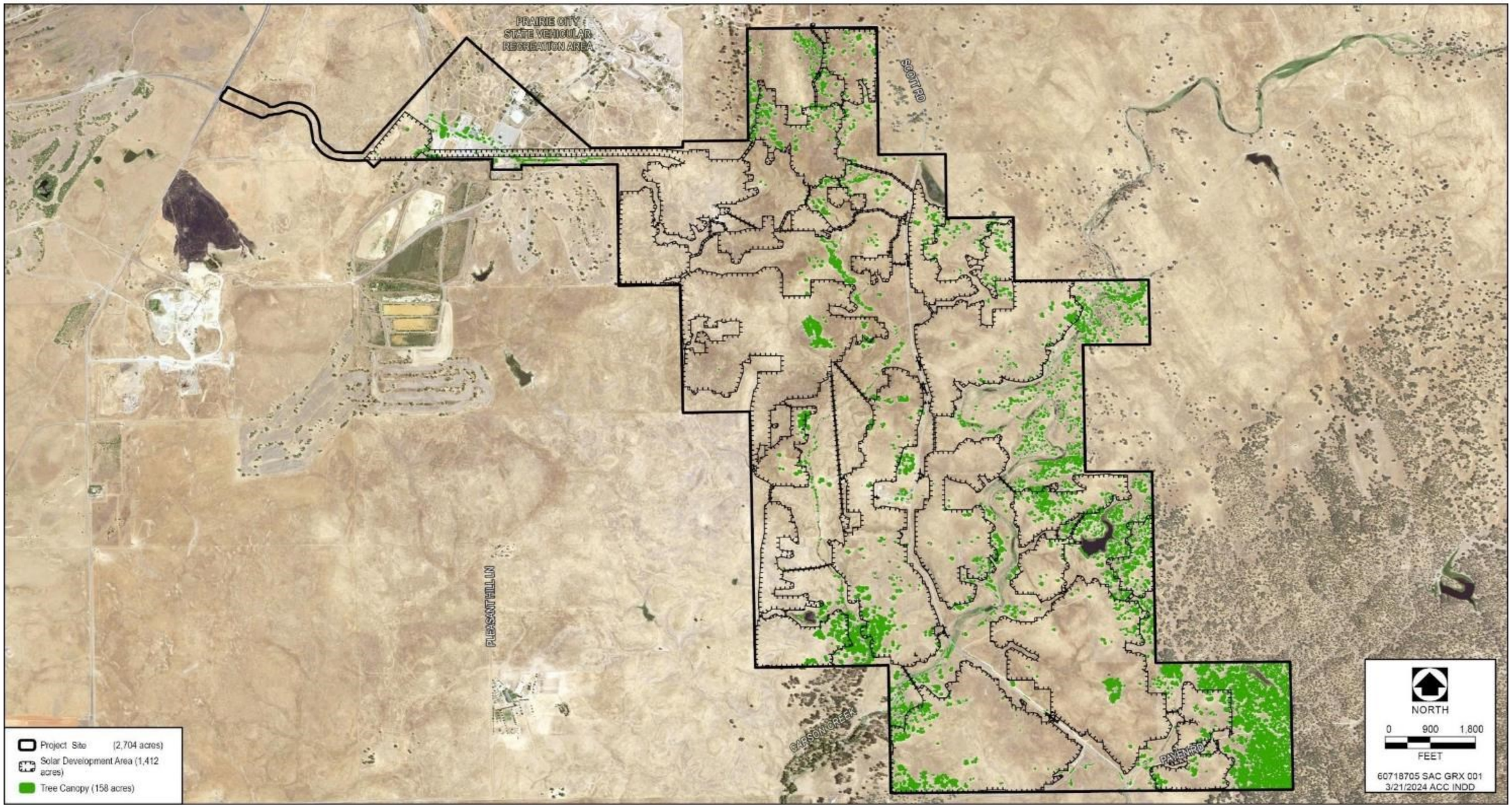
Potential Damage to Trees and Substantial Changes to the Existing Viewshed

During the project's construction and decommissioning phases, construction equipment, personnel, and materials storage would be visible in the foreground throughout the approximately 2.8-mile-long stretch of Scott Road that traverses the project site. 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. The areas underneath the solar panels and areas that were cleared for construction laydown would be reseeded either with native vegetation or with grasses suitable for grazing.

As shown in KOP 10 through KOP 23, Scott Road traverses rolling hills and grassland along with stands of oak woodland and scattered individual oak trees. As described in the Biological Resources Technical Report (Dudek 2024b), 4,787 trees within the solar development area in the project site, some of which are visible from Scott Road, would be removed in order to implement the proposed project. The tree canopy that would be removed from the proposed solar development at the project site is shown on Plate AE-3 (i.e., everything within the "Solar Development Area"). Plate AE-3 also illustrates the relationship between the viewshed from Scott Road and the tree canopy that would be removed. As shown in Plate AE-3, select clusters of trees in the foreground and middleground views from Scott Road would be retained. It should be noted that existing trees would be retained along the Carson Creek and Coyote Creek channels, and along the southeastern edges of the project site where the largest concentration of trees is present. In addition, existing trees along Scott Road that are outside of the northern portion of solar development area would be retained.

Visual Simulations 6 through 19 show the changes in visual character and quality from various locations along Scott Road through the project site at full project buildout. The visual simulations include conceptual views of landscape screening (shown at maturity) that could be implemented by the project applicant.

Plate AE-3: Tree Canopy at the Project Site



Sources: Dudek 2024b, adapted by AECOM in 2024

Source: Dudek 2024a

Visual Simulation 6:KOP 10. Looking East towards from Scott Road east of Prairie City SVRA. Pavement on Scott Road, signage, fencing, and grassland would be visible in the foreground. Existing oak trees in the middleground would be removed and replaced with solar panels. The proposed solar panels would not be visible behind proposed landscape screening (at maturity), immediately adjacent to Scott Road at this location. The canopies of select oak trees outside of the solar development area would remain and would continue to be visible above proposed landscape screening The Sierra Nevada foothills would continue to be visible in the background to the northeast.

Source: Dudek 2024a

Visual Simulation 7: KOP 11. Looking South from Scott Road. Pavement on Scott Road, signage, fencing, and grassland on the project site would be visible in the foreground and middleground. Some trees in the lower elevation middleground would be removed and replaced with solar panels. Most of the existing trees in the view would be retained and solar panel development would primarily occur on the grassland-covered hillside in the middleground to the south.

Source: Dudek 2024a

Visual Simulation 8: KOP 12. Looking Southwest from Scott Road. Fencing along Scott Road, and grassland and oak trees on the project site would be visible in the foreground and middleground. Solar panels would be visible approximately 800 feet from Scott Road at this location, and would be partially screened by landscaping (at maturity). Most solar panels would be concentrated on lower elevation terrain in the middleground to the south; a few lines of solar panels would be installed on more distant hillsides to the southwest but would be mostly obscured by intervening topography and oak trees.

Source: Dudek 2024a

Visual Simulation 9: KOP 13. Looking Southeast from Scott Road. Fencing along Scott Road, and grassland and oak trees on the project site would continue to be visible in the foreground and middleground. Solar panels would be visible in the middleground on lower elevation terrain and hillsides (landscape screening would be implemented along the closest edge of the solar development area). In addition, transmission line power poles would also be visible in the middleground and background.

Source: Dudek 2024a

Visual Simulation 10: KOP 14. Looking Northeast from Scott Road. Fencing along Scott Road, and grassland on the project site are visible in the foreground and middleground. Canopies of two isolated oak trees that were visible above the local horizon line have been removed and replaced with solar panels that would be mostly blocked from view by proposed landscape screening (at maturity).

Source: Dudek 2024a

Visual Simulation 11: KOP 15. Looking Southwest from Scott Road. Fencing along Scott Road, and grassland and oak trees on the project site are visible in the foreground and middleground. Several large oak trees in the foreground on the low hill to the north adjacent to the road have been removed. Solar panels would be visible in the foreground and middleground, along with an internal access road, perimeter fencing, and partial landscape screening (at maturity).

Source: Dudek 2024a

Visual Simulation 12: KOP 17. Looking Northeast from Scott Road near the Barton Ranch Headquarters. Fencing along Scott Road, and grassland on the project site would be visible in the foreground. Views in the foreground in the middleground would consist of solar panels with landscape screening (at maturity). Prominent oak trees atop the low hill to the northeast would remain and views to the oak tree-clustered, rolling hill topography beyond the project site to the northeast would be mostly preserved.

Source: Dudek 2024a

Visual Simulation 13: KOP 18. Looking Southwest from Scott Road near the Barton Ranch Headquarters. Grassland and oak trees on the project site would continue to be visible in the background to the north. The foreground view would change from open grassland to solar panels with landscape screening (at maturity). The middleground view would also change from grassland to lines of solar panels.

Source: Dudek 2024a

Visual Simulation 14: KOP 19. Looking Northeast from Scott Road. Grassland in the foreground and middleground, along with scattered oak trees in the middleground, would be replaced with solar panels, fencing, and landscaping screening (at maturity). New transmission line poles would be visible in the background to the north.

Source: Dudek 2024a

Visual Simulation 15: KOP 20. Looking Northeast across Carson from Scott Road. The Scott Road bridge overcrossing and the Carson Creek streambed (dry in this photograph) would continue to be visible in the foreground, and the grassland and oak trees on the northwest side of Carson Creek would continue to be visible in the middleground. Proposed solar panels along Scott Road approximately 1,000 feet north would be visible in a relatively small portion the middleground landscape (on the left side of the photo).

Source: Dudek 2024a

Visual Simulation 16: KOP 21. Looking Southwest on the south side of Carson Creek from Scott Road. Pavement on Scott Road and the Carson Creek bridge overcrossing are visible in the foreground, along with a portion of the Carson Creek streambed (dry in this photograph) and bridge abutment. Wood power poles with overhead electrical lines are also visible in the foreground. Grassland and oak trees on the project site are visible in the middleground. Solar panels, project fencing, internal access roads, and landscape screening would be visible from this vantage point.

Source: Dudek 2024a

Visual Simulation 17: KOP 22. Looking Northwest on the north side of Carson Creek from Scott Road. Foreground views of grassland and the Scott Road bridge over Carson Creek would be similar to existing conditions. Existing middleground views of grassland and oak trees would be replaced by solar panels, along with landscape screening (at maturity).

Source: Dudek 2024a

Visual Simulation 18: KOP 23. Looking Southeast from Scott Road. Grassland and oak trees in the foreground and middleground on the project site would be replaced with solar panels, gravel access road, fencing, and landscape screening (at maturity).

Source: Dudek 2024a

Visual Simulation 19: KOP 24. Looking Northeast from Scott Road at Boys Ranch Road. Grassland on the project site in the foreground and middleground, and oak tree views in the middleground, would be replaced with solar panels, gravel roads at one of the new project site entries, fencing, and landscape screening (at maturity). The tree line on the hillside beyond the project site would remain visible above proposed solar panels.

As shown in KOP 10 through KOP 24, approximately 2.8 miles of Scott Road bisects the project site from north to south. Scott Road is a two-lane asphalt paved road. The project site is also visible from portions of Scott Road further north and south of the project site due to the rolling topography. The segment of Scott Road where the General Plan establishes the County's policy to "[c]ontinue to provide scenic corridor protection" (Sacramento County 2022a, page 41) is within the project site.

As shown in Visual Simulations 6 through 19, proposed project facilities would have a varying degree of visibility from Scott Road. In certain locations such as from Scott Road at the north end of the project site, mostly full visual screening of solar panels from landscaping in the available south-facing view would occur (see Visual Simulation **6**6). Elsewhere, the installation of solar panels would be visible. However, due to the distance from Scott Road to solar panels, the location of solar panels on hillsides as opposed to ridgelines, and partial screening of solar panels by existing topography and oak trees (or by proposed landscaping), resulting visual effects to views would be softened (see Visual Simulations 7, 8, and 15). At all remaining assessed vantage points from Scott Road, proposed solar panels would be visually prominent and while landscaping would aid in the partial screening of solar panels and fencing available to Scott Road motorists, solar panels (which would generally be located to the east and west of Scott Road) would detract from existing views of the valley landscape. In these locations, the introduction of solar panels would attract the attention of passing motorists. As previously stated, an approximately 2.8-mile-long segment of Scott Road runs through the project site in a north-south direction and along this segment, and proposed solar panels would be visible in the landscape. However, proposed solar panels would generally be set back 100 feet or more from the road.

In select locations such as at KOP 11, the closest solar panels would be over 1,300 feet away and visual effects would be somewhat moderated by distance and by partial screening of solar panels by existing topography and oak tree vegetation that would be retained. At KOP 11, solar panels would be located to northwest, west, and south but the landscape to the east would not be developed (see Plate AE-2).

Further, at KOP 12, proposed solar panels would be set back approximately 800 feet from southbound Scott Road motorists, and therefore the resulting visual effects to the existing view would be moderate, and would, ultimately, be softened by the introduction of proposed landscaping. It should be noted that at KOP 12, southbound motorists would also be exposed to views of solar panels to the east of Scott Road and their introduction would substantially detract from the available view (see Visual Simulation 9 that approximates the east view for motorists at KOP 13). The visual character and quality of the scenic viewshed along the 2.8-mile-long segment of Scott Road through the project site would be degraded by implementation of the proposed project, as a result of the change in foreground and middleground views from grassland and oak trees to grassland and oak trees intermixed with solar panels, gravel roads, and fencing.

While project components would have a varying degree of visibility (and impact severity) from Scott Road, anticipated changes resulting from project operations within the viewshed of the segment of Scott Road where the General Plan establishes the County's policy to "[c]ontinue to provide scenic corridor protection" (Sacramento County 2022a, page 41), would generally be moderate to severe. Proposed landscaping would tend to soften the introduction of and partially screen project components from view of passing Scott Road motorists. While landscaping would

not completely block views of the solar panels along Scott Road from all possible vantage points, landscaping would be effective at screening portions of the surface of the solar facility site and shorter project components from view. Lastly, native oak trees visible from the Scott Road corridor would be removed, thereby adversely affecting some of the scenic resources within the existing viewshed. Due to the severity of visual change anticipated along the 2.8-mile-long segment of Scott Road including the loss of native blue oak trees, this impact concerning damage to scenic resources and the scenic Scott Road viewshed is **significant**.

Mitigation Measures

AE-2: Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success.

The project applicant shall implement the County-approved landscape screening and irrigation plan (attached as Appendix AE-1), which shall include oak thickets comprised of evergreen interior live oaks (*Quercus wislizeni*) that will form a dense native tree with a low canopy that can live for many decades. Native shrubs shall also be planted, which shall be comprised of fast-growing drought-resistant locally native shrubs.

Supplemental watering shall be provided at a minimum for the first 5 years after planting, and shall be continued thereafter as long as necessary to ensure the survival of the plantings.

The landscape screening plan shall include specific details as to the species, sizes of plants, method of planting, method and frequency of watering, maintenance activities (such as weeding and inspection of watering systems), and frequency of monitoring.

After the landscape planting has been implemented, annual monitoring reports related to the health of the plantings shall be provided to the County during the five-year establishment period. Dependent on establishment success, the county may request additional monitoring reports thereafter. Should the overall efficacy of the landscaping be reduced due to excess plant mortality, plantings shall be replaced by the project applicant, and supplemental watering for the replacement plants shall be provided by the project applicant until the replacement plants are established.

The landscape planting shall be maintained by the project applicant throughout the project lifespan and if supplemental watering is required to support the landscape screening throughout the project's lifespan, the applicant shall provide it (anticipated to be at least 35 years, but potentially longer if the project remains economically viable).

Implement Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities).

Significance After Mitigation

In the short term, generally the first five years, before the landscape plantings required in Mitigation Measure AE-2 are established, there would be no reduction in the level of the impact because portions of the viewshed along Scott Road would change from undeveloped grassland and mature oak trees to solar panels, gravel roads, and agricultural-style woven fencing. Landscape vegetation at the time of planting would not be of sufficient size to soften views of the project. Therefore, short-term views from the segment of Scott Road where the General Plan

establishes the County's policy to "[c]ontinue to provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road…" (Sacramento County 2022a, page 41) would be **significant and unavoidable**.

In the long term, implementing Mitigation Measures AE-2 and BR-2 would reduce the effect on the scenic viewshed from the segment of Scott Road where the General Plan establishes the County's policy to "[c]ontinue to provide scenic corridor protection" (Sacramento County 2022a, page 41), but not to a less-than-significant level. As shown in Plate AE-3, oak trees within portions of the viewshed of Scott Road would be removed and replaced with solar panels. Native oak trees are proposed to provide a natural screening effect, and would be effective at obstructing some views of the solar array approximately 5 years after planting. However, the native oak trees would be of a different species (i.e., interior live oak [*Quercus wislizeni*]) that would provide a low-growing "thicket" appearance planted as a hedge, rather than the taller open-canopy native blue oak (*Quercus douglasii*) species that are currently present. The faster-growing interior live oak species have been selected to provide softening after 5 years.

At 3 years after planting approximately 30 percent of the oak seedlings would likely die, and approximately 50 percent of the surviving 3-year seedings would likely die after 15 years due to the difficulty of establishing native oaks from plantings (Garth Ruffner Landscape Architect 2023). This rate of efficacy has been incorporated into planting numbers to ensure screening efficacy. To provide the proposed visual landscape softening effect, all of the species that must be used would be planted to create hedgerows, which would have an artificial appearance as compared to the existing natural landscape. However, even after the landscaping plantings are established, they would not provide screening of all project facilities from the segment of Scott Road where the General Plan establishes the County's policy to "[c]ontinue to provide scenic corridor protection" (Sacramento County 2022a, page 41) because of the rolling topography; rather, they would provide a softening effect. No other feasible mitigation measures are available. Thus, and although the project does not impact any scenic highway, the long-term impact to scenic resources and the scenic viewshed from the segment of Scott Road where the General Plan establishes the County's policy to "[c]ontinue to provide scenic corridor protection" (Sacramento County 2022a, page 41) would be **significant and unavoidable**.

IMPACT AE-3: SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF THE PROJECT SITE AND CONFLICTS WITH APPLICABLE ZONING AND OTHER REGULATIONS GOVERNING SCENIC QUALITY

DEGRADATION OF VISUAL CHARACTER OR QUALITY

DEER CREEK HILLS PRESERVE

The Deer Creek Hills Preserve provides scenic vistas of rolling grasslands, blue oak woodlands, creeks, and (from some locations) the Sierra Nevada. The trails available for public use at the Deer Creek Hills Preserve are approximately 1.5 miles southeast of the closest solar panels at the project site (adjacent to Payen Road at Scott Road). The topography at the Preserve is similar to the project site: gently rolling hills. Even at the highest elevation points on the designated public-use trails in the Preserve, there are intervening ridgelines which are substantially higher than the trails. Therefore, due to the intervening rolling topography and oak woodlands, the solar panels would not be visible to recreationists in the Preserve. Thus, there

would be **no impact** from substantial degradation of visual character or quality from public recreation trails in the Deer Creek Hills Preserve.

GRANT LINE ROAD/WHITE ROCK ROAD

As shown in KOP 1, the existing viewshed is of moderate visual quality, and the western end of the project's proposed access road would be of similar appearance to the existing Grant Line and White Rock Road roadways. The proposed switchyard and gen-tie line would only be visible in background views approximately 0.7 mile east of the intersection of Grant Line and White Rock roads. The switchyard would be approximately 8.25 acres in land area, and would not be a solid mass; views through the tall metal switchyard facilities would be available. The size of the switchyard would be very small in comparison to the panoramic viewshed shown in KOP 1. The heights of the poles in the switchyard and the gen-tie line would be similar to the existing 230-kV metal transmission towers that are visible in the background of KOP 1 to the east, and would be installed in a similar location. There would be no change to foreground or middleground views other than the new 20-foot-wide private gravel roadway, and the existing panoramic views of the Sierra Nevada foothills would be unchanged. Thus, the impact from substantial degradation of visual character or quality for motorists traveling on Grant Line and White Rock Roads would be **less than significant**.

PRAIRIE CITY SVRA ACCESS ROAD

The project's proposed switchyard would be visible in the foreground to recreationists using the Prairie City SVRA access road, at a distance of approximately 300 feet to the southwest (KOP 2). Plate AE-4 provides a photograph of an existing gen-tie switchyard in Sacramento that would have a similar visual appearance and size as compared to the project's proposed facilities. The approximately 8.25-acre switchyard could include facilities up to 100 feet tall. The heights and visual appearance (metal structures) of the switchyard facilities and nearby gen-tie line would be similar to the existing 230-kV metal transmission towers that are visible in the middleground. At a distance of 300 feet from the roadway, the switchyard would fill the middleground and background viewshed shown in KOP 2. Further southeast on the Prairie City SVRA access road, the viewshed is comprised of varying manmade elements within the SVRA (see Plate AE-2) that are of different heights, forms, colors, and textures (see KOPs 3 and 4); the overall visual quality is low. The 150-foot-tall gen-tie metal towers and overhead lines would be visible on the west side of the SVRA access road from KOPs 3 and 4.

Plate AE-4: Existing Gen-Tie Switchyard in Sacramento Similar to Proposed Project

Source: Dudek 2024a

Past the existing Prairie City SVRA Kart Track, the project's proposed construction access road along the gen-tie corridor between the switchyard and substation would continue east off the existing SVRA paved access road and along the route of what is now the SVRA's Feldspar Trail (dirt OHV trail), south of the Kart Track shown in KOP 4. A permanent access road is not proposed along the gen-tie corridor. The existing line of trees and shrubs extending south along the SVRA property boundary would remain in place. From the Prairie City SVRA access road, the lower halves of the 150-foot-tall metal gen-tie towers would be blocked by the existing line of shrubs and trees, but the top halves of the metal towers and the overhead electrical lines would be visible to recreationists traveling on the SVRA access road in the foreground looking up against the sky. Based on the above, the viewshed from KOP 2 would substantially change; the viewshed from KOP 3 would moderately change; and the viewshed from KOP 4 would change very little. The visual quality of the KOP 2, KOP 3, and KOP 4 viewsheds is low, and views of the top portions of the gen-tie towers and overhead electrical lines would not be substantial enough to change the existing visual quality. Thus, the impact from substantial degradation of visual character or quality for recreationists traveling on the Prairie City SVRA access road would be **less than significant**.

PRAIRIE CITY SVRA OHV TRAILS

Proposed solar panels would not be visible from the Hangtown Motocross Track or the associated parking area due to the intervening topography. As stated above, the Prairie City Motocross Track is home to the Hangtown Motocross Classic, part of the Lucas Oil AMA Pro Motocross Championship Series; an event which draws over 26,000 visitors annually. Total yearly visitor attendance throughout the Prairie City SVRA in 2013 consisted of 65,004 recreational visitors and 76,697 special-event visitors, for a total of 141,701 yearly visitors (State Parks 2016).

However, as shown on Plate AE-2, proposed solar panels in the northeast corner of the project site would be visible to OHV riders on the Cougar Trail, Rattlesnake Trail, and Jack Rabbit Loop (in the southeast corner of the SVRA) at distances ranging from 865 feet east to 1,100 feet southeast.

As also shown on Plate AE-2, there are a variety of named dirt OHV trails in the southwest quadrant of the Prairie City SVRA (e.g., Quartz Trail, Placer Trail, Clay Trail, Shale Trail, Pyrite Trail, Sandstone Loop, and Sedimentary Trail). There are also additional dirt OHV trails formed as "use trails" throughout this area, which are not named (also shown on Plate AE-2). The proposed solar panels and the proposed substation would be visible to OHV recreationists on portions of these trails in the southwest quadrant of the Prairie City SVRA. Visual Simulations 1 through 5 (presented above in Impact AE-1) illustrate the viewshed changes from the SVRA trails that are closest to the northwestern portion of the project site.

As shown in Visual Simulations 1 through 5 (in Impact AE-1), the visual character of the landscape to the south and east from the OHV trails in the southwest quadrant of the Prairie City SVRA (Quartz Trail, Placer Trail, Clay Trail, Shale Trail, Pyrite Trail, Sandstone Loop, and Sedimentary Trail) would change substantially, from open rolling grassland to solar panels situated atop rolling hill topography and intermixed with grasslands, and a substation with components up to 150 feet tall. The gen-tie route, which would consist of one or two single-circuit structures constructed with up to 150-foot-tall wood, concrete, or steel poles, would stand out in the landscape and against the skyline in foreground and middleground views from the OHV trails in the southwest quadrant of the Prairie City SVRA. Despite the tall, vertical scale of new wood, concrete, or steel poles, the distance between individual poles would help to preserve some of the long distance, scenic views from OHV trails across the landscape located to the east of the project site. A new lower-voltage powerline and communications line for the proposed project would share the same structures or share the same easement as the gen-tie line and therefore would also be visible and would detract from the existing landscape. As explained in the Environmental Setting, the viewsheds illustrated in KOP 5, KOP 6, and KOP 8 exhibit a high degree of intactness and unity, and a moderate degree of vividness; the visual quality is moderate. The viewshed in KOP 7 exhibits a high degree of intactness, unity, and vividness; the visual quality is high. Viewer sensitivity for recreationists is high on the OHV trails in the areas shown in KOP 5 through KOP 8, as well as the OHV trails up to 1,700 feet to the northwest which are open and provide expansive views of these project areas for recreationists within the SVRA (see Plate AE-2).

The visual appearance of the substation and solar panels throughout the foreground and middleground views available from the Prairie City SVRA would substantially alter the existing visual character, and would degrade the existing visual quality of the project site from moderate and high to low. While the visual experience of trail users at times includes trails across hilly terrain that exist already within the SVRA, the existing character of the project site is that of a primarily undeveloped, rolling hill topography featuring grasslands and clusters of oak trees. As also previously shown in Visual Simulation 1 (in Impact AE-1), the visual character and quality of the viewshed to the south and east from the Prairie City SVRA overlook area would also be substantially degraded due to the changes in the middleground views from rolling hills covered with grass and oak trees to solar panels amongst the grassland and oak tree-dotted landscape. The viewshed from trails in the southeast corner of the SVRA (Cougar Trail, Rattlesnake Trail, and Jack Rabbit Loop) would also change substantially as described above, similar to Visual Simulations 17 and 18. Therefore, this impact is **significant**.

SCOTT ROAD

As shown in Visual Simulations 7 through 19 and discussed in detail in Impact AE-2, proposed project facilities would be visible throughout a 2.8-mile-long segment of Scott Road, which is a public roadway that provides access for motorists to White Rock Road and Latrobe Road. The

visual character and quality of the viewshed along the segment of Scott Road where the General Plan establishes the County's policy to "[c]ontinue to provide scenic corridor protection" (Sacramento County 2022a, page 41) would be substantially degraded by implementation of the proposed project, as a result of the change in foreground and middleground views from grassland and oak trees to solar panels, gravel roads, and agricultural-style woven fencing. Therefore, this impact is **significant**.

PLEASANT HILL LANE SINGLE-FAMILY RESIDENCE

Under CEQA, an evaluation of a project's potential visual change as viewed from private property is not required. Nevertheless, this analysis includes a discussion of the potential viewshed changes from the large-lot rural residence (with an associated horse barn and training facilities) on Pleasant Hill Lane, approximately 0.75 miles west of the second southwestern corner of the project site. Pleasant Hill Lane is accessed via Glory Lane, from Grant Line Road. Glory Lane and Pleasant Hill Lane are private roadways; thus, it was not possible to obtain photographs for use as KOPs. Therefore, a desktop analysis was performed by reviewing topographic maps and by reviewing Google Earth aerial imagery from June of 2021.

The private residence on Pleasant Hill Lane is situated on an elevated knoll at an elevation of approximately 250 feet above mean sea level. The nearest solar panels would be installed to the east in a direct line of the viewshed from the back of the residence, at a distance of approximately 0.75 miles. The viewshed to the east from the residence consists of rolling hills covered with grassland in the foreground and background, stands of blue oak trees on the hills and valleys in the middleground and background, and the Sierra Nevada in the distant background. The viewshed exhibits a high degree of intactness, vividness, and unity, and therefore the visual quality is high. The visual appearance of the middleground views from the residence after project implementation would be similar to that shown in Visual Simulation 1 (KOP-9). Project implementation would change the existing viewshed in the middleground from rolling hills covered with grassland and oak trees, to solar panels.

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 middleground views to the east from the private residence on Pleasant Hill Lane would represent a substantial degradation of the existing visual character and quality.

CONFLICTS WITH APPLICABLE ZONING AND OTHER REGULATIONS GOVERNING SCENIC QUALITY IN URBAN AREAS

Based on site visits, the KOPs and descriptions in this section, and U.S. Census mapping showing urban areas, the project site not situated within an urbanized area (U.S. Census Bureau 2024). Therefore, an analysis of the project's potential conflicts with zoning and other regulations governing visual quality is not required. Please refer to Chapter 11, "Land Use and Planning," of this EIR for an analysis of the project's potential to conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

MITIGATION MEASURES

Implement Mitigation Measure AE-2 (Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success).

Implement Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities).

Significance After Mitigation

Because of the differences in topography and distances from the viewers at the Prairie City SVRA and on the project site, landscape screening to block views of the solar panels and the substation for recreationists within the SVRA would not be effective. No other feasible mitigation measures are available. Thus, the degradation of visual character and quality in south and east-facing views from the southwest quadrant of the Prairie City SVRA, including views from an Overlook, would remain **significant and unavoidable**.

In the long term, implementing Mitigation Measures AE-2 and BR-2 would soften the effect on views from the Scott Road viewshed, but not to a level that is less than significant. As shown in Plate AE-3, blue oak trees within portions of the viewshed of Scott Road would be removed and replaced with solar panels. Native oak trees are proposed as part of the plantings to provide a natural screening effect, and would be effective at obstructing some views of the solar array approximately 5 years after planting. Although native oak tree species are included in the landscape plan required in Mitigation Measure AE-2, they would be of a different species (i.e., interior live oak [*Quercus wislizeni*]) that would provide a low-growing "thicket" appearance planted as a hedge, rather than the taller open-canopy native blue oak (*Quercus douglasii*) species that are currently present. The faster-growing interior live oak species have been selected to provide visual softening after 5 years. At 3 years after planting approximately 30 percent of the oak seedlings would likely die, and approximately 50 percent of the surviving 3-year seedings would likely die after 15 years due to the difficulty of establishing native oaks from plantings (Garth Ruffner Landscape Architect 2023). This rate of efficacy has been incorporated into planting numbers to ensure screening efficacy. To provide the proposed visual landscape softening effect, all of the species that must be used would be planted to create hedgerows, which would have an artificial appearance as compared to the existing natural landscape. However, the landscape plantings would not provide screening of all views of project facilities from the segment of Scott Road where the General Plan establishes the County's policy to "[c]ontinue to provide scenic corridor protection" (Sacramento County 2022a, page 41) because of the rolling topography; rather, they would provide a softening effect. The viewshed from Scott Road through the project site would be modified from views of a rural landscape of native blue oak trees and grassland to views including solar panels, gravel roads, and agricultural-style woven fencing, with some landscape screening. No other feasible mitigation measures are available. Thus, the long-term impact from substantial degradation of visual character and quality of the viewshed from Scott Road through the project site would be **significant and unavoidable**.

Impact AE-4: Create Substantial New Sources of Light and Glare

Glare Analysis

In 2024, Dudek Consulting was retained to prepare a *Glare Analysis Report* for the proposed project (Dudek 2024c), which is included as Appendix AE-2. The analysis was conducted per the recommended procedures described in the FAA's *Technical Guidance for Evaluating Selected Solar Technologies on Airports* (FAA 2018); and the Sandia National Laboratories' Solar Glare Hazard Analysis Tool used by Dudek adheres to FAA policy regarding solar energy

system projects on federally obligated airports[2] (86 FR 25801–25803). With the Solar Glare Hazard Analysis Tool, there are standardized safety metrics to define the anticipated glare intensity that would cause unwanted visual impacts to air traffic control towers and airplane pilots. 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 an industry-standard ForgeSolar 3-D geometric glare analysis software tool, which can predict when and where glare would occur from a proposed PV array at discrete observation points.[3] In instances where glare may be a concern, the software can prescribe minor adjustments to the tilt, direction, and location of the panels to alleviate issues.

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, residents, and recreationists. 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. Glare intensity is described according to the potential for after-images in human eyesight. For the purpose of Dudek's (2024c) *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, the PV system for the proposed project would employ a single-axis tracking mechanism that would adjust to rotate the solar panels following the sun's trajectory as it crosses the sky. This tracking system would be oriented running north–south with the panel faces rotating from east to west. The system would be able to track the sun's progression across the sky, within the system's 120 degrees range of motion (60 degrees to the east and 60 degrees to the west). When the sun is not within the 120 degrees range of motion, the panels would rest at 60 degrees.

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 surface of the panels used for the proposed project would be constructed out of smooth glass and would include an anti-reflective coating.

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[2] 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.

[3] It should be noted that the visibility analysis and geometric modeling software does not consider existing vegetation or structures that might obscure the view of the panels from sensitive receptor locations.

Dudek's (2024c) *Glare Analysis Report* considered various potential glare receptors within the project vicinity consisting of residences, local roadways, airports and airport flight paths[4], and OHV trails within the Prairie City SVRA. The modeled receptors for the glare analysis (Dudek 2024c) consist of the following:

- Mather Airport Air Traffic Control Tower (the Rancho Murieta Airport does not have a control tower);
- 18 residential dwellings (selected as representatives from different locations around the project site);
- 6 airport flight paths (including Mather Airport and Rancho Murieta Airport) extending two miles from each runway and following a straight-line approach vector;
- 13 nearby roadways; and
- 3 OHV trails in the southwest corner of the Prairie City SVRA.

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 (2024c) 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. Model inputs included the physical location, orientation, build material (including the presence of anti-reflective coatings), tilt angle, and tracking technology. 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 hazardous glare (i.e., the potential for after-images in human vision) from any of the proposed solar panel arrays at any of the modeled receptors (Dudek 2024c: Table 3 and Figures 4 and 5). Because the proposed project would utilize a tracking system that keeps the surface of the PV arrays pointed perpendicular to the sun's rays for most of the day, this would maximize the solar absorption of the panels and minimize glare. When the sun exits the maximum rotation angle of the solar arrays, the panels would stay fixed at their maximum tracking angle, thereby transmitting any glare into the sky and away from ground-based receptors such as residents, local roads, and OHV riders on trails within the Prairie City SVRA. Furthermore, the panels would be treated with an anti-reflective coating. Finally, because of the distance of the project site from the Sacramento Mather Airport and the Rancho Murieta Airport, and the azimuth (the angle relative to the proposed project), glare would be reflected into the sky at an elevation that would not intersect the flight paths of aircraft approaching these airports. Therefore, the impact associated with creation of a new source of substantial glare is considered **less than significant**.

[4] Rectangular flight patterns and non-approach flight paths associated with nearby airports were excluded from this analysis due to the FAA's most recent determination that in most instances, the glint and glare from solar energy systems experienced by pilots are comparable to those routinely encountered from water bodies, glass façade buildings, parking lots, and similar features (86 FR 25801–25803). Additionally, the distance of the flight patterns for these airports are substantially greater than would be expected for solar arrays located on airport property.

Nighttime Lighting

Nighttime lighting during the project's construction and decommissioning phases may be utilized. During project operation, low elevation (lower than 14 feet) controlled security lighting is proposed at primary access gates, the on-site substation, and at the entrances to the BESS facilities. Nighttime lighting would only be provided in areas where it is required for safety, security, or operations and would only turn on when personnel enter the area (through either motion-sensor or manual activation [switch]). Additionally, all operational lighting would be shielded and pointed downwards.

The Prairie City SVRA OHV routes are closed at sunset. However, there are activities that occur at night on the various tracks within the SVRA, including the Quarter Midget Track, Kart Track, Mini MX Track, and the Hangtown Motocross Track. Nighttime lighting associated with the BESS facility entrance and the substation would be approximately 0.64 mile east of the Kart Track and Quarter Midget Track; approximately 0.9 mile east of the Mini MX Track; and approximately 0.64 mile south of the Hangtown Motocross Track. Trees along the Prairie City SVRA southern boundary, which would not be removed as part of the proposed project, would help to provide some screening between the nighttime lighting at the substation and BESS and the Quarter Midget Track, Kart Track, and Mini MX Track. The proposed project also includes 10 primary entrance gates from Scott Road, where nighttime security lighting would be required. Unshielded or high-voltage nighttime security lighting could result in adverse nighttime light or glare effects for recreationists traveling on internal SVRA access roads or using SVRA facilities, as well as motorists traveling on Scott Road. Therefore, the long-term operational impact associated with creation of a new source of substantial nighttime lighting is considered **potentially significant**.

Nighttime lighting during the project's construction and decommissioning phases may be utilized. If nighttime construction activities were to occur within 500 feet of Scott Road or the Prairie City SVRA access road when nighttime events were occurring, nighttime lighting associated with that construction would result in nighttime glare for motorists on the adjacent roadways. Therefore, the short-term construction and decommissioning impacts associated with creation of a new source of substantial nighttime lighting are considered **significant**.

Mitigation Measure

AE-4. Prepare a Lighting Plan.

The project applicant shall prepare a lighting plan for County review and approval that includes implementation of the following measures.

Construction and Decommissioning

- If nighttime lighting is required where construction areas are 500 feet or closer to Scott Road or to any facilities or roadways at the Prairie City SVRA, 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 roadway/SVRA facility.

- 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.

- All work zone illumination shall use the minimum foot-candles necessary to safely perform the required work.

- 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.

Operation

- Shield or screen all exterior lighting fixtures to direct the light downward, focus on the area to be illuminated, and prevent light spillover onto adjacent properties.
- Place and shield or screen lighting needed for security so as not to disturb adjacent properties or passing motorists.
- High intensity or high brightness light fixtures (e.g., harsh mercury vapor, low-pressure sodium, or fluorescent bulbs) shall not be used. Light-emitting diode (LED) lighting shall be used to the maximum extent feasible.
- All nighttime exterior lighting shall either be motion-controlled, or shall be turned on and off when needed using a manual switch.

Significance after Mitigation

Implementation of Mitigation Measure AE-4 would reduce the significant impacts associated with glare and skyglow during nighttime construction, decommissioning, and operational activities to a level that is **less than significant with mitigation** because a lighting plan would be prepared that requires construction areas that are 500 feet or closer to roadways and SVRA facilities to be screened and construction lighting to be shielded and directed downward; and permanent operational lighting would either be motion-controlled or operated manually via a switch, would utilize low-intensity LED fixtures, and would be shielded so the light is directed downward.

4 AGRICULTURAL RESOURCES

INTRODUCTION

This chapter 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.

ENVIRONMENTAL SETTING

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 2022 was approximately $602 million. This value represents an increase of approximately 5 percent from the 2021 value of $568 million (Sacramento County Agricultural Commissioner 2023).

In 2020, wine grapes had the highest crop value ($189 million), with over 34 reported varieties being grown on 36,000 acres. Milk production is the number two commodity at $91 million, followed by pears ($56 million), poultry ($33 million), and aquaculture[1] ($32 million) (Sacramento County Agricultural Commissioner 2023). The Agricultural Commissioner also noted substantial increases in 2022 crop values for honey and pollination values (24 percent), silage corn (55 percent), alfalfa hay (20 percent), and ryegrass (46 percent) compared to 2021 values (Sacramento County Agricultural Commissioner 2023).

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.)

Table AG-1 summarizes acreages of agricultural land in Sacramento County between 2010 and 2020 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

[1] Aquaculture consists of raising bass, carp, catfish, crayfish, sturgeon, and caviar.

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

agricultural land in 2010, of which 211,745 acres (58 percent) were classified as Important Farmland and 155,824 acres (42 percent) were classified as grazing land (DOC 2020). By 2020, the total acreage of agricultural land decreased to 348,215 acres, of which 200,426 acres (58 percent) were classified as Important Farmland and 147,789 acres (42 percent) were classified as grazing land (DOC 2020). Overall, the total acreage of Important Farmland decreased by approximately 5.3 percent over this 10-year period, while the total acreage of agricultural land decreased by 5.3 percent (Table AG-1). While the number of acres of Prime Farmland and Farmland of Statewide Importance decreased by 13.1 percent and 3.2 percent, respectively, the number of acres of Unique Farmland and Farmland of Local Importance increased by approximately 3.8 percent and 4.4 percent, respectively. The total acreage of Grazing Land decreased at a similar rate (5.2 percent) during this period.

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

Important Farmland Category	Acres in 2010	Acres in 2020	Net Change (%) (2010–2020)
Prime Farmland	97,477	84,684	-13.1
Farmland of Statewide Importance	45,263	43,825	-3.2
Unique Farmland	15,076	15,642	3.8
Farmland of Local Importance	53,929	56,275	4.4
Important Farmland Subtotal	**211,745**	**200,426**	**-5.3**
Grazing Land	155,824	147,789	-5.2
Agricultural Land Total	**367,569**	**348,215**	**-5.3**

Source: DOC 2020

PROJECT SITE AGRICULTURAL USES

The project site has historically and is currently used year-round for livestock grazing. According to the Sacramento County Important Farmland Map, published by the California Division of Land Resource Protection (DOC 2020), approximately 2,577 acres of the project site is designated as grazing land and 1,394 acres of the solar development area is designated as grazing land. The remainder of the solar development area is designated as Other Land (approximately 14 acres) and Urban and Built-Up Land (approximately three acres) (DOC 2020). Plate PD-3 in Chapter 2, “Project Description” shows the location of Important Farmland within and adjacent to the project site.

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.

Approximately 1,334 acres of the solar development area is subject to Williamson Act contracts. The Williamson Act contracts for these parcels have been amended by Sacramento County to allow for solar PV facilities and battery energy storage in conjunction with agricultural activities.

Agricultural Zoning

The project site is currently zoned AG-80 by Sacramento County. The AG-80 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 2023).

Permitted uses within the AG-80 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 2023).[3] 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 2023).[4]

Regulatory Setting

Federal

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

[3] See Table 3.1, "Allowed Uses," in the Sacramento County Zoning Code (available: https://planning.saccounty.gov/LandUseRegulationDocuments/Pages/SacramentoCountyZoningCode.aspx).

[4] 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.

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 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 2024):

- **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 2018).
- **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 following policies in the Sacramento County General Plan (2020) related to agricultural resources that may be applicable to the proposed project:

AGRICULTURAL ELEMENT

Policy 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

Policy 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.

Policy 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.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

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.

ISSUES NOT DISCUSSED FURTHER

Conflict with Existing Zoning for Agricultural Use— The project site is currently zoned by Sacramento County as AG-80. The AG-80 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-80 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-80 zoning designation to ensure compatibility of the proposed project with surrounding uses and zoning (Sacramento County 2023). 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 a Williamson Act Contract— Approximately 1,334 acres of the solar development area is subject to Williamson Act contracts. The Williamson Act contracts allow for gas, electric, water, and communication utility facilities, as well as solar PV facilities and battery energy storage in conjunction with agricultural activities. Because the proposed project is an allowable use, there would be no conflicts with existing Williamson Act contracts. 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 zoned AG-80 and 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).[6] Approximately 54.61 acres of contiguous oak woodlands and forest are within the solar development area, which is less than 10 percent of the solar development area. 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.

Indirectly Result in the Conversion of Agricultural Land to Non-Agricultural Use— There are no actively farmed agricultural lands in the vicinity of the project site, only grazing lands. 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 Important Farmland, to non-agricultural uses. Therefore, **no impact** would occur, and this issue is not addressed further in this EIR.

[6] Per PRC Section 12220(g), "forest land" is land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetic, fish and wildlife biodiversity, water quality, recreation, and other public benefits.

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

At the proposed project site, approximately 1,412 acres of existing livestock (sheep and cattle) grazing land would be used for new solar generating facilities. Most of the project site would consist of pole-mounted solar panel arrays. In addition, battery storage containers, an electrical substation, a switchyard, internal roadways, fencing and gates, and other ancillary facilities would be developed.

According to the Sacramento County Important Farmland Map, published by the California Division of Land Resource Protection (DOC 2020), approximately 1,394 acres of the solar development area is designated as grazing land. The remainder of the project site is designated as Other Land (approximately 14 acres) and Urban and Built-Up Land (approximately three acres) (DOC 2020).

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 project site is designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; therefore, no impact would occur under the CEQA thresholds.

However, County General Plan Policy AG-5 defines the loss of 50 acres or more of 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, switchyard, entrances, and interior access roads would result in new impervious surfaces associated with the project facilities. 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 2025), which is included in Appendix AG-1.

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 2023) is included in 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 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.[7] To monitor success, 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. As part of this monitoring program, annual Decommissioning Restoration Monitoring Reports describing the above information shall be prepared by the project applicant for the first five years following the decommissioning of the project. The annual reports shall be submitted to Sacramento County Planning and Environmental Review. 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 2023).

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 Measures

AG-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.

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

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

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; (3) pollinator habitat; and (4) 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 is not recommended in June, July, or August due to high temperatures in the region and subsequent low germination success. As such, seeding is recommended and optimal from October through January or February in this region to utilize natural precipitation for irrigation and increase overall germination survivorship. The vegetation is intended to reestabilish natually following construction, additional seeding may; be required if a groundcover fails to be established and meet the requirements of the Agricultural Management Plan.

GRAZING AND POLLINATOR HABITAT 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 six inches in accordance with local fire codes. 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.

VEGETATION AND POLLINATOR HABITAT MONITORING PLAN

Annual Vegetation and Grazing Monitoring 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 subsequent reports shall be submitted to Sacramento County Planning and Environmental Review. These reports shall document the estimated species coverage and diversity, species health and overall vigor, the establishment of volunteer native species, topographical/soils conditions, problem weed species, whether there is significant drought stress, and remedial measures recommended to ensure the habitat function and value within the solar facility is consistent with the habitat function and value outside of the solar facility. These reports shall include at a minimum:

- The name, title, and company of all persons involved in restoration monitoring and report preparation.
- Maps or aerials showing restoration areas, transect locations, and photo documentation locations.
- An explanation of the methods used to perform the work, including the number of acres treated for removal of non-native plants, any revegetation or weed control efforts undertaken.
- An assessment of the achievement of the relevant performance for vegetation success and how the vegetation management compares to non-managed areas located outside of the fenced solar facility.

GRAZING MONITORING PLAN

Annual Vegetation and Grazing Monitoring 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 regarding the level of grazing use at the project site. The annual reports and subsequent reports shall be submitted to Sacramento County Planning and Environmental Review, the County's Assessor's Office, 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 native grassland ground cover that is utilized by biological resources native to the project area.

SIGNIFICANCE AFTER MITIGATION

The implementation of Mitigation Measure AG-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* (Included as Appendix AG-1, Dudek 2025) with conditions directed by Mitigation Measure AG-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 AG-1, the conversion of farmland would not occur because, except roads, utility equipment, and battery storage areas, the project applicant would be required to continuously use the project site for agricultural uses, such as grazing. With the implementation of Mitigation Measure AG-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 (1,394 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. Policy PF-78 indicates that impacts to County resources can be minimized by locating solar facilities close to existing facilities necessary for connection to the electrical grid. Policy PF-78 suggests that solar facilities should be located on farmlands of the lowest quality, e.g., land classified by the DOC as other land or grazing land and to avoid high-quality farmlands that are classified as Prime Farmland or active Williamson Act contracted land. The proposed project site does not contain any Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.

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 AG-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.

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).

ENVIRONMENTAL SETTING

Ambient concentrations of air pollutants are determined by the amount of emissions released by the air pollutant 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 (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 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 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

There are many pollutants present in the atmosphere, although most are not a significant public health concern in the project region. 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. The project site is located in the central region of the Sacramento Regional Nonattainment Zone, which typically exhibits NO_X-limited chemistry (SMAQMD 2023).

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 2023a). 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 2023b). 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 2024a).

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. People with asthma (EPA 2023c).

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 2023d).

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. U.S. Environmental Protection Agency (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 cardiovascular effects, increased blood pressure and incidence of hypertension, decreased kidney function, and reproductive problems (EPA 2023e). Lead poisoning can cause abdominal pain, anemia, lethargy, seizures, and death (US Department of Health and Human Services 2020).

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 (2020 through 2022) 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 Sloughhouse, approximately 5.9 miles southwest 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 miles west 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 10.6 miles west 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	2020	2021	2022
Ozone 1 Hour	Max 1 Hour (ppm)	0.092	0.104	0.098
Ozone 1 Hour	Days > State Standard (0.09 ppm)	0	2	1
Ozone 8 Hour	Max 8 Hour (ppm)	0.077	0.097	0.085
Ozone 8 Hour	Days > State Standard (0.070 ppm)	6	13	5
Ozone 8 Hour	Days > National Standard (0.070 ppm)	5	13	5
NO_2 Annual	Annual Average (ppm)	0.005	-	0.005
NO_2 1 Hour	Max 1 Hour (ppm)	0.046	0.024	0.034
NO_2 1 Hour	Days > State Standard (0.18 ppm)	0	0	0
PM_{10} Annual	Annual Average (µg/m^3)	-	24.8	22.3
PM_{10} 24 hour	Max 24 Hour (µg/m^3)	203.0	58.0	54.0
PM_{10} 24 hour	Days > State Standard (50 µg/m^3)	10	4	1
PM_{10} 24 hour	Days > National Standard (150 µg/m^3)	1	0	0
$PM_{2.5}$ Annual	Annual Average (µg/m^3)	11.8	-	-
$PM_{2.5}$ 24 hour	Max 24 Hour (µg/m^3)	126	190.4	26.1
$PM_{2.5}$ 24 hour	Days > National Standard (35 µg/m^3)	20	5	0

Source: CARB 2024b

Notes:

- = insufficient data; µg/m^3 = micrograms per cubic meter; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ppm = parts per million.

The 2020 24-hour PM_{10} maximum concentration appears to have been affected by wildfire events (EPA 2023f).

Toxic Air Contaminants

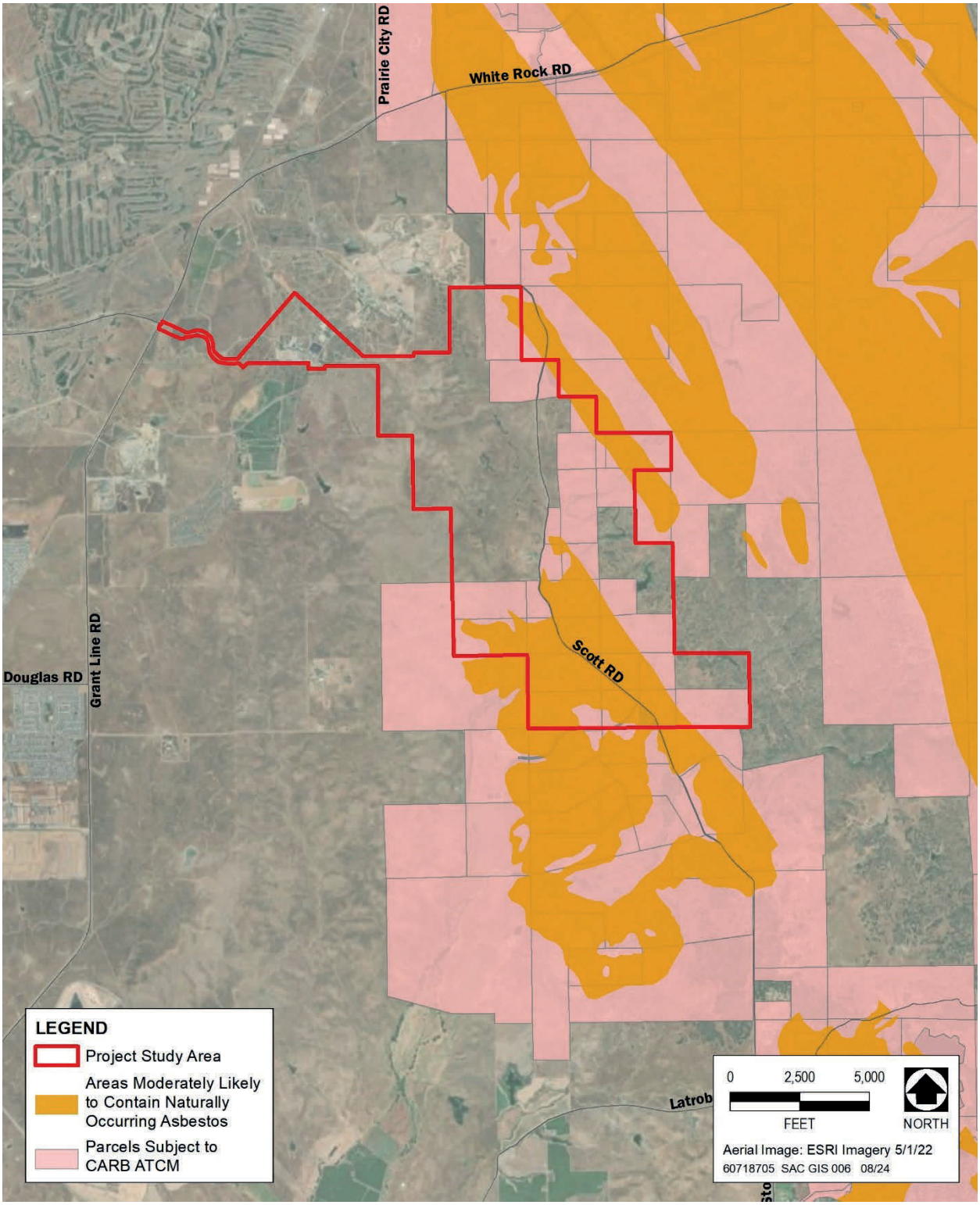
TACs are a set of airborne pollutants that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term 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.

Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Stationary sources of hazardous air pollutants (HAPs) include gasoline stations, dry cleaners, and diesel backup generators, 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 TACs. 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 areas categorized as moderately likely and least likely to contain NOA (California Department of Conservation 2006). This data is provided in Plate AQ-1, below.

Plate AQ-1: Relative Likelihood of Naturally Occurring Asbestos in the Project Vicinity



Source: SMAQMD 2017

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 and recreational land uses. Sensitive land uses in the project vicinity include single-family residences north of the project site along the entrance to the Prairie City State Vehicular Recreation Area and west of the project site along Pleasant Hill Lane. The nearest sensitive receptor to the proposed project facilities is a residence along the entrance to the Prairie City State Vehicular Recreation Area approximately 3,200 feet north of the proposed project's northwestern boundary.

Odors

The ability to detect odors varies considerably among the population and is subjective. Offensive odors can affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects, such as stress.

Several examples of common land uses that generate substantial odors are wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. In addition, odors can be caused by agricultural activities, such as dairy operations; horse, cattle, or sheep (livestock) grazing; fertilizer use; and aerial crop spraying.

REGULATORY SETTING

The project site is within in the SVAB, in the eastern portion of the SMAQMD's jurisdictional boundary. The 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 framework related to criteria air pollutants, TACs, and other types of emissions is summarized below.

FEDERAL

CRITERIA AIR POLLUTANTS

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 delegates primary responsibility for clean air to EPA. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies.

Under the CAA, EPA has established the national ambient air quality standards (NAAQS) for six criteria air pollutants discussed previously: ozone, CO, NO_2, SO_2, particulate matter (PM_{10} and $PM_{2.5}$), 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. These health-based pollutant standards are reviewed with a legally prescribed frequency and are revised, as warranted, based on 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. The SIP is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analyses. The SIP is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, air district rules, state regulations, and federal controls. The SIP must include pollution control measures that demonstrate how the standards will be met by the dates specified in CAA.

Toxic Air Contaminants

Air quality regulations also focus on HAPs, referred to at the state level as TACs. Stationary sources of HAPs include gasoline stations, dry cleaners, and diesel backup generators, all of which are subject to permit requirements and permit conditions designed to avoid any substantial adverse environmental impact. On-road motor vehicles and off-road sources, such as construction equipment and trains, are also common sources of HAPs. 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.

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

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

Source: CARB 2016

Key:
µg/m^3 = micrograms per cubic meter; CO = carbon monoxide; EPA = U.S. Environmental Protection Agency; H_2S = hydrogen sulfide; mg/m^3 = milligrams per cubic meter; NA = not applicable; 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; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide.

1 California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter – (PM_{10}, $PM_{2.5}$, and visibility reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded.

2 National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 °C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25 °C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or molecules of pollutant per mole of gas.

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

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

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

7 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

8 In December 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 to 12.0 micrograms per cubic meter (µg/m^3). The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

9 The national standard for lead was revised in October 2008 to a rolling 3-month average.

10 In 1989, CARB converted the statewide 10-mile visibility standard to an instrumental evaluation, which is “extinction of 0.23 per kilometer”. 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.

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

Pollutant	Federal Standard	State Standard
Ozone	Nonattainment	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		Unclassified
Sulfates	No Federal Standard	Attainment
Visibility-Reducing Particles		Unclassified

Source: SMAQMD 2024

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 by the specified attainment 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 DPM, 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 Department of Motor Vehicles 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 (AB 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.

Additional state regulations have been implemented 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.

CALIFORNIA CODE OF REGULATIONS, SECTION 93105, TITLE 17, ASBESTOS AIRBORNE TOXIC CONTROL MEASURE

CARB developed an Asbestos Airborne Toxic Control Measure for Asbestos-Containing Serpentine. Construction, grading, quarrying, and surface mining in areas known to have naturally occurring asbestos can generate asbestos concentrations that represent a potential public health hazard, requiring dust control measures. This Airborne Toxic Control Measure requires small projects that disturb one acre or less to wet the soil area to be disturbed; wet, cover, or stabilize storage piles; limit vehicle speeds; clean equipment before moving it off-site; and clean up visible trackout on the paved public road. Large construction projects that disturb more than one acre are required to obtain an approved dust mitigation plan from the SMAQMD. The plan must specify measures that will be taken to control emissions of dust and must address track out prevention and removal, disturbed surface areas and storage piles that will be inactive more than seven days, on-site vehicle traffic, active storage piles, earthmoving activities, off-site transport, post construction stabilization, and air monitoring (if required by the SMAQMD). No equipment or activities shall emit dust that is visible crossing the property line.

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 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.
- **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.

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 considered 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 SFNA is meeting requirements under the federal CAA in demonstrating reasonable further progress and attainment of the NAAQS for ozone (SMAQMD 2017). 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 (CARB 2018). The SFNA, including SMAQMD, adopted the *2023 Sacramento Regional Plan for the 2015 8-Hour Ozone Standard* (2023 Ozone Plan) and submitted to the plan to CARB. CARB approved the 2023 Ozone Plan on October 26, 2023, and submitted the plan to the U.S. EPA for final review and approval as a SIP. The SFNA is classified as "serious" nonattainment for the 2015 ozone standard. As part of the plan, the SFNA air districts requested a reclassification to "severe" with an attainment deadline of August 3, 2033 (CARB 2023).

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. In September 2023, EPA proposed to approve the Second PM_{10} Maintenance Plan.

COUNTY OF SACRAMENTO GENERAL PLAN

The following goal and policies from the "Air Quality" Element of the County of Sacramento General Plan (County of Sacramento 2022) may be applicable to the project.

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

Policy 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.

Policy 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.

Policy 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.

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

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. Pursuant to the Airborne Toxic Control Measure (ATCM) for Construction Grading, Quarrying, and Surface Mining Operations, owners or operators must either apply for an Asbestos Dust Mitigation Plan or test out of the ATCM requirements with a Geologic Evaluation prior to any construction activities.

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[1] Hazard Index of 1; or

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

- 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 2021).

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) Version 2020.4.0[2] and OFFROAD2021 (v1.0.4)[3] were used to estimate emissions from construction, operation, and decommissioning of the project. As described in Appendix AQ-1, CalEEMod input parameters, including the 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 (Dudek 2025). For the purposes of the air pollutant emissions estimates, construction was assumed to commence in March 2024 and continue through August 2025.[4] The first operational year of the project was assumed to be 2025. Project decommissioning activities are anticipated to occur 30 years[5] after the project becomes operational and would continue for approximately 12 months. Construction will commence at a later date compared to the original analytical assumptions, which would tend to produce conservative estimates that would overstate actual impacts.

Construction and decommissioning activities would require the use of off-road equipment including skid loaders, rough terrain forklifts, graders, scrapers, bulldozers, rollers,

[2] 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. In June 2022, the California Air Pollution Control Officers Association released a new version of CalEEMod, version 2022.1. At the time the notice of preparation (NOP) was prepared on January 19, 2022, CalEEMod 2020.4.0 was the latest version of the software available.

[3] 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.

[4] 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 March 2024.

[5] Project decommissioning activities were assumed to occur 30 years after the project becomes operational for purposes of air quality modeling. This does not change the current anticipated facility operational life of 35 years, as noted in Chapter 2, "Project Description".

tractors/loaders/backhoes, excavators, rollers, cranes, and all-terrain vehicles. Construction activities would also require rock blasting to excavate, break down, and remove rock. Some of the rock created by blasting would be crushed, resulting in particulate emissions, as well as emissions of ozone precursors (ROG and NO_X), SO, and SO_X from the use of explosives. The emissions created by blasting and crushing were calculated using the EPA's Compilation of Emission Factors (AP-42) as described in Appendix AQ-1. During site preparation, excess grading materials will be spread evenly across the site resulting in no offsite export or import. For the switchyard, 7,500 cubic yards of soil will be exported. 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. The project would be required to comply with the SMAQMD Rule 403 to control dust emissions generated during any dust-generating activities. Finally, it was assumed that water used during construction activities would be trucked to the project site from a water purveyor located approximately 24 miles from the project site.

Operational activities would include regular inspection and maintenance activities associated with operation of the facility and would generate area and mobile source emissions of criteria air pollutants. Area-source emissions associated with landscape/maintenance equipment were also calculated. Mobile source emissions account for up to 10 trips per day anticipated to result from inspection and maintenance activities. An additional 32 trips per day were also included to account for water being trucked in for panel washing and sheep/goat grazing activity.

For additional details regarding the air quality methodology and assumptions, please refer to Appendix AQ-1, *Air Quality and Greenhouse Gas Calculations Memorandum for the Coyote Creek Agrivoltaic Ranch Project*.

A health risk assessment (HRA) was performed to evaluate potential health risk associated with construction of the project. For risk assessment purposes, the analysis conservatively assumed PM_{10} exhaust to be representative of DPM, which the CARB identified as a TAC in 1998. DPM, originates mainly from combustion engines in off-road diesel construction equipment (e.g., bulldozers; graders). Less-intensive, more-dispersed emissions result from on-road vehicle exhaust (e.g., heavy-duty diesel trucks). The HRA analysis assumed DPM emissions from diesel trucks in close proximity to the site with a trip length of 0.25 mile. The HRA followed the Office of Environmental Health Hazard Assessment (OEHHA) 2015 guidelines (OEHHA 2015) and SMAQMD guidance to calculate the health risk impacts at all proximate receptors as further discussed in Appendix AQ-1, *Air Quality and Greenhouse Gas Calculations Memorandum for the Coyote Creek Agrivoltaic Ranch Project*.

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 applicable air quality plans are described in the Regulatory Setting section above. 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 for either the NAAQS or CAAQS, as shown in Table AQ-3. SMAQMD has adopted air quality plans pursuant to regulatory requirements under EPA and CARB for the attainment and maintenance of the NAAQS and CAAQS, as detailed above in "Regulatory Setting" under "Sacramento Metropolitan Air Quality Management District." The goal of the air quality plans is to reduce criteria pollutant emissions for which the SVAB is designated as nonattainment in order to achieve the NAAQS and CAAQS by the earliest practicable date. As documented in the SMAQMD CEQA Guide (SMAQMD 2021), the SMAQMD construction and operational mass emissions threshold for ozone precursors correlate to the NO_X and ROG reductions from heavy-duty vehicles and land use projects committed to in the 2004 Ozone Attachment 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[6] 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 region's attainment status (SMAQMD 2015). Therefore, projects whose emissions do not exceed the recommended non-zero PM thresholds of significance, with implementation of fugitive dust control practices, 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

[6] 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.

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 would 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 proposed 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 applicable SMAQMD air quality plans, including the Ozone Attainment and Progress Plan, $PM_{2.5}$ Maintenance Plan, and PM_{10} Implementation/Maintenance Plan. Similarly, for these same reasons, the County's General Plan policies related to air quality require feasible strategies to reduce ozone precursors and particular matter. 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 operations from vehicle trips associated with regular inspections, maintenance, and water trucked in for panel washing and grazing, along with emergency generators, implementation of best management practices would be required in order to apply the SMAQMD non-zero thresholds of significance for PM. As shown in Table AQ-7, operational emissions would not exceed the recommended SMAQMD non-zero 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-2e.**

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

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 subject to CARB regulations 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, estimated emissions of NO_X and PM_{10} would still exceed SMAQMD's thresholds of significance.[7] Mitigation Measure AQ-2c 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 proposed project's construction emissions for comparison to the SMAQMD's thresholds of significance. Mitigation Measure AQ-2d would require participation in the SMAQMD's off-site mitigation fee program through the purchase of the required offsets needed based 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}.[8] Therefore, with implementation of Mitigation Measures AQ-2a through AQ-2d, 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 pollutant emission reduction strategies. 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 zero threshold for PM emissions. Therefore, implementation of Mitigation Measure AQ-2e would be required to utilize the SMAQMD's non-zero thresholds. With implementation of Mitigation Measure AQ-2e, best management practices would be

[7] Non-zero threshold for PM_{10}.

[8] Non-zero threshold for PM_{10}.

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 and decommissioning phase but would 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 Unmitigated 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 [2]	**100.34**	**357.61**	**297.73**	**40.97**	**15.2**	**2.4**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	**Yes**	**Yes**	No	**Yes**	No
Decommissioning Emissions	**21.54**	**48.66**	**219.02**	**24.17**	**16.4**	**1.8**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	No	**Yes**	No	**Yes**	No

Notes: 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.

2 Construction is conservatively anticipated to occur in 2024 and 2025. Appendix AQ-1 includes daily emission rates for each year of construction. The maximum daily emission rate between construction years is included in this table.

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 from the switchyard. 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. Even if the mobile-source emissions are not apportioned, the cumulative amount of the emissions are well below the significance threshold in each air district. 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 and Annual 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 [1]	**0.04**	**0.17**	**1.25**
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

1 Construction is anticipated to occur in 2024 and 2025. Appendix AQ-1 includes daily emission rates for each year of construction. The maximum daily emission rate between construction years is included in this table.

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 [1]	**0.94**	**1.86**	**0.01**	**0.01**
BAAQMD Threshold of Significance [2]	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 Construction is anticipated to occur in 2024 and 2025. Appendix AQ-1 includes daily emission rates for each year of construction. The maximum daily emission rate between construction years is included in this table.

2 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}[9]; the project's maximum annual construction emissions would exceed the SMAQMD's recommended non-zero threshold for 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

[9] Non-zero threshold for PM_{10}.

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)	$PM_{2.5}$ [1] (lbs/day)	PM_{10} [1] (tons/year)	$PM_{2.5}$ [1] (tons/year)
Emissions	**3.70**	**14.90**	**0.86**	**0.58**	**0.07**	**0.03**
SMAQMD Threshold of Significance	65	65	80	82	14.6	15
Threshold Exceeded?	No	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] 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 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 Off-Road Equipment Exhaust-Related Emissions during Construction and Decommissioning.

- The applicant shall require off-road diesel-fueled equipment with engines larger than 50 horsepower to 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-2c 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. Submit Construction and Decommissioning Emissions Control Plans.

- 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 using the new equipment. 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.

- Prior to decommissioning of the facility, the construction contractor shall submit a Construction Emissions Control Plan, subject to the same requirements and stipulations as described above.

AQ-2d. Off-Site Construction and Decommissioning Mitigation.

- If, based upon the incorporation of all measures described above in Mitigation Measures AQ-2a through AQ-2c, NO_X or PM_{10} emissions still exceed the daily SMAQMD threshold for NO_X and the non-zero threshold for PM_{10}, the project shall participate in the SMAQMD's Offsite Mitigation Program by paying to SMAQMD a mitigation fee for construction and decommissioning activities, to be determined at the time of construction and decommissioning based on the submitted equipment inventories 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 non-zero threshold 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-2e. Implement Best Management Practices for Reducing Operational PM Emissions.

The applicant shall include as a condition of building permit issuance, 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 and Decommissioning

Project construction and decommissioning activities would result in NO_X and PM_{10} emissions that would exceed SMAQMD-recommended threshold of significance for NO_X and the non-zero threshold for PM_{10}, as shown in Table AQ-4. 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 and Annual Construction- and Decommissioning-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)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)
Construction Emissions [1]	**89.94**	**246.44**	**229.29**	**30.21**	**12.3**	**1.8**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	**Yes**	**Yes**	No	No	No
Decommissioning Emissions	**19.10**	**43.82**	**156.24**	**17.83**	**12.0**	**1.4**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	No	**Yes**	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

[1] Construction is conservatively anticipated to occur in 2024 and 2025. Appendix AQ-1 includes daily emission rates for each year of construction. The maximum daily emission rate between construction years is included in this table.

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 daily thresholds of significance[10]. As such, Mitigation Measure AQ-2c 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-2d 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-2d, 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-2e would ensure compliance with the applicable operational best management practices to reduce PM emissions. With implementation of Mitigation Measure AQ-2e, 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 and recreational land uses. Sensitive land uses in the broader vicinity of the project site include single-family residences. The nearest sensitive receptor to the proposed project facilities is a residence along the entrance to the Prairie City State Vehicular Recreation Area approximately 3,200 feet north of the proposed project facilities, as measured at the closest point to proposed construction and decommissioning activities.

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 and diesel haul trucks. More than 90 percent of DPM is less than 1 micrometer in diameter, and thus is a subset of $PM_{2.5}$

[10] Non-zero threshold for PM_{10}.

(CARB n.d.). Exhaust PM_{10} is conservatively used as the upper limit for DPM emissions associated with construction of the proposed project.

As described above, the nearest sensitive receptor to the proposed project facilities is a residence along the entrance to the Prairie City State Vehicular Recreation Area approximately 3,200 feet north of the northern boundary of the proposed project site. However, construction and decommissioning activities would occur throughout the 2,704-acre project site – construction activities would occur up to over 20,000 feet (approximately 3.78 miles) away from the nearest sensitive receptor (a residence) and most construction and decommissioning activities would occur at a distance of between 3,200 feet and 20,000 feet from the nearest sensitive receptor. 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 18 months and one year, respectively. The anticipated off-road equipment and activity schedule, including the phasing of construction and decommissioning activities, is included in Appendix AQ-1.

As described in the Methodology section above, an HRA was conducted to evaluate potential health risk associated with construction of the project. The HRA estimated the maximum individual cancer risk and the chronic hazard index as a result of project construction. Results of the construction HRA are presented in Table AQ-9.

Table AQ-9: Construction Health Risk Assessment Results - Unmitigated

Impact Parameter	Units	Project Impact	SMAQMD Threshold
Maximum Individual Cancer Risk at the MEIR	per Million	0.7	10
Chronic Hazard Index	Index Value	0.001	1.0

Notes: MEIR = Maximally Exposed Individual Receptor; SMAQMD = Sacramento Metropolitan Air Quality Management District
Source: See Appendix AQ-1 for detailed HRA assumptions and results.

As shown in Table AQ-9, both the maximum individual cancer risk and the chronic hazard index are below the respective SMAQMD thresholds. Therefore, the TAC health risk impacts from construction-related exhaust emissions would be **less than significant.** Additionally, Mitigation Measure AQ-2b would further reduce TAC health risk impacts by requiring off-road diesel-powered equipment larger than 50 horsepower to meet or exceed EPA/CARB Tier 4 Final emissions standards.

To evaluate potential health risk impacts associated with decommissioning activities, the estimated construction emissions and associated health risk impact is used for comparison to the estimated decommissioning emissions. As shown in Table AQ-4, unmitigated emissions of PM_{10} estimated for decommissioning-related activities are approximately 26 percent lower than PM_{10} emissions estimated for construction. The

unmitigated maximum individual cancer risk and chronic hazard index for construction, as calculated by the HRA and indicated in Table AQ-9, are 0.7 in one million and 0.001, respectively. Both the unmitigated maximum individual cancer risk and chronic hazard index for construction are well below the SMAQMD significance thresholds. Therefore, because the construction HRA results indicate the health risk impacts would be less than significant, and because the decommissioning emissions would be approximately 26 percent lower than the construction emissions, the health risk impacts associated with decommissioning activities would also be below the SMAQMD thresholds. Additionally, project 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 decommissioning activities at any given location and the dispersive properties of TACs, temporary decommissioning activities would not expose sensitive receptors to DPM emission levels that would result in a health hazard. This decommissioning health risk impact would be **less than significant**. Implementation of Mitigation Measures AQ-2a and AQ-2b would further reduce this impact.

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 42 daily trips, results 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 staff traveling to and from the project and from vehicle trips to transport water for panel washing and livestock grazing, and would generally not be proximate to the project site perimeter and nearby residences. Panel washing would be infrequent, occurring one to four times per year, depending on site conditions, with each panel washing cycle requiring 14 days to complete. Because the project site is currently used cattle grazing, project vehicle trips for water for livestock grazing would not substantially increase compared to existing conditions. The infrequent vehicle trips associated with maintenance and daily staff vehicle trips are not substantial sources of TAC emissions (e.g., DPM). 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**. Implementation of the Mitigation Measure AQ-2e would further reduce operational TAC emissions.

Naturally Occurring Asbestos (NOA)

As described above in “Toxic Air Contaminants”, 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 areas categorized as moderately likely and least likely to contain NOA (California Department of Conservation 2006). Exposure to soil dust containing asbestos can occur under a variety of scenarios, including grading and earth disturbing activities. The SMAQMD CEQA Guide states that the impact related to asbestos exposure shall be considered potentially significant if a project would be located in an area moderately likely

to contain NOA. Therefore, this impact for constructed- and decommissioning-related asbestos exposure is considered **potentially significant.**

Criteria Air Pollutant 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.

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 is consistent with the *Sierra Club v. County of Fresno* decision. 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 non-zero 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 of the SMAQMD screening modeling 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 threshold of significance for NO_X and the non-zero threshold of significance for PM_{10}. NO_X emissions associated with project construction activities would be approximately 4.2 times the threshold, while PM_{10} emissions would be approximately 3.7 times the non-zero threshold. After implementation of Mitigation Measure Measures AQ-2a and AQ-2b, daily emissions during construction would be approximately 2.9 times the threshold for NO_X and 2.9 times the non-zero 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 and occur over a shorter duration than the estimated emissions for construction; therefore, the construction-related emissions estimates reflect 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 6.5 miles west of the proposed project site, emitting 100 pounds per day of ROG, 357 pounds per day of NO_X, and 41 pounds per day of $PM_{2.5}$ could result in an estimate of 4.5 premature deaths per year or a 0.01-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 0.17 premature deaths per year or a 0.00056 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 and AQ-2b, which would reduce the

project's construction-related emissions of criteria air pollutants below the SMAQMD's thresholds of significance. Daily emissions of ROG, NO_X, and $PM_{2.5}$ would be reduced to approximately 90, 246, and 30 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 occurring over the 18-month construction duration would 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 to inform the public of the proposed project contribution to health risks. 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**.

Mitigation Measures

AQ-3: Site Investigation for Potential Naturally Occurring Asbestos.

> A site investigation shall be performed to determine whether and where NOA is present in the soil and rock on the project site in areas that would be disturbed by the project and that are within "areas moderately likely to contain NOA," as determined by the map in California Geological Survey's report titled Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California and mapped in Plate AQ-1, above. The site investigation shall include the collection of soil and rock samples by a California Registered geologist as determined by the geologist and in coordination with the County. If the site investigation determines that NOA is not present on the project site, the project applicant shall submit a Geologic Exemption as allowed under Title 17, Section 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining (Asbestos ATCM). If the site investigation determines that NOA is present on the project site, the project applicant shall submit an Asbestos Dust Mitigation Plan that includes the control measures required by the Asbestos ATCM for review and approval by the District before beginning any ground disturbance activity. Upon approval of the Asbestos Dust Mitigation Plan by the District, the applicant shall ensure that construction contractors implement the terms of the plan throughout the construction period. The Asbestos Dust Mitigation Plan will also be a required component of the bonded decommissioning plan that the contractor shall implement throughout the decommissioning period.

Significance After Mitigation

Construction and Decommissioning

Although construction-related health risks would not exceed the SMAQMD thresholds of significance and mitigation to reduce health risks is not required, implementation of Mitigation Measure AQ-2b would be required to reduce the mass emissions of PM_{10}, and NO_X below criteria pollutant thresholds of significance, as described in Impact AQ-2. Implementation of this measure will also reduce emissions of DPM, which will further reduce the health risk impacts from construction activities. Table AQ-10 presents the construction health risk assessment results with implementation of Mitigation Measure AQ-2b for informational purposes.

Table AQ-10: Construction Health Risk Assessment Results - Mitigated

Impact Parameter	Units	Project Impact	SMAQMD Threshold
Maximum Individual Cancer Risk	per Million	0.1	10
Chronic Hazard Index	Index Value	0.0001	1.0

Notes: SMAQMD = Sacramento Metropolitan Air Quality Management District

Source: See Appendix AQ-1 for detailed HRA assumptions and results.

As shown in Table AQ-10, with implementation of mitigation measure AQ-2b, the construction health risk impacts would be further reduced and exposure of sensitive receptors to substantial pollutant concentrations would remain **less than significant**.

Implementation of Mitigation Measure AQ-3 would reduce impacts associated with generation of fugitive dust that potentially contains NOA. If the site investigation determines that NOA is present on the project site, then implementation of a District-approved dust mitigation plan would reduce impacts related to construction and decommissioning activities in serpentinite soils. Therefore, exposure to NOA during construction and decommissioning would be **less than significant with mitigation**.

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 and decommissioning 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**.

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/or solar development area and identifies and analyzes impacts related to these resources resulting from implementation of the proposed project. In addition, this analysis addresses the consistency of the project with the goals and objectives of the South Sacramento Habitat Conservation Plan (SSHCP). As discussed in detail under "Regulatory Setting" below, the majority of the solar development area (1,252 acres) is located outside of the Urban Development Area (UDA) and solar development is not a covered activity under the SSHCP. Therefore, the project would not be subject to receive take coverage under the SSHCP and is not required to implement or comply with the provisions of the SSHCP. However, the conservation strategy and specific measures of the SSHCP were taken into consideration during the analysis if impacts on biological resources in this EIR.

The description of biological resources information and analysis presented in this section is based on the project-specific Biological Technical Report, Aquatic Resources Delineation Report, Arborist Report, and South Sacramento Habitat Conservation Plan Consistency Analysis prepared by Dudek (Appendix BR-1), from which information was verified and further evaluated by AECOM to support the independent analysis presented in this document; in some cases, acreages were re-calculated as a result.

ENVIRONMENTAL SETTING

The project site comprises numerous parcels that total approximately 2,704 acres in land area within the Consumnes community of unincorporated Sacramento County. Of the approximately 2,704-acre project site, approximately 1,412 acres of this area would be developed to support the project and is collectively referred to as the "solar development area." The remaining approximately 1,292 acres are referred to as "adjacent other lands" and would not be developed as part of the project. The project site is located on Barton Ranch in eastern Sacramento County approximately 2.5 miles south of White Rock Road in the Cosumnes rural residential community (refer to Plate BR-1 and Plate BR-2 in Chapter 2, "Project Description"). The project site is located within the southeastern Sacramento Valley vernal pool region and overlaps the easternmost portion of the Mather Core Recovery Area (USFWS 2005).

In the biological resources appendix (Appendix BR-1), the approximately 2,704-acre project site is referred to as the study area (study area or project study area [PSA]), and was evaluated for all biological resources, including additional species-specific buffers, as appropriate (see Appendix BR-1).

The project site has historically been used for sheep and cattle grazing and for apiary facilities. Other land uses vicinity of the project site include grazing, aggregate mining, Aerojet's currently vacant industrial lands, and the Prairie City State Vehicle Recreation Area (SVRA).

The project site is characterized by relatively flat topography with scattered rolling hills; elevations generally range from 150 to 350 feet above sea level. The majority of the project site is open grassland that has historically been used for grazing. Seasonal wetlands, vernal pools, and seasonally inundated wetlands and non-wetland waters (e.g., ephemeral drainages) are scattered throughout the project site. Two perennial streams, Carson Creek and Coyote Creek, flow northeast to southwest across the project site and eventually merge outside the project site and flow into Deer Creek, a tributary to the Cosumnes River.

Soils encountered during field surveys conducted within the project site were identified as primarily loamy soils, some with claypan. Of the total of 22 soil units mapped within the project site according to the Soil Survey, five are considered partially hydric. A wetland delineation confirmed hydric soils in a number of wetland features present on-site. Additional discussion of the project site's climate, soils, and hydrology are provided in Appendix BR-1 and in Chapter 10, "Hydrology and Water Quality."

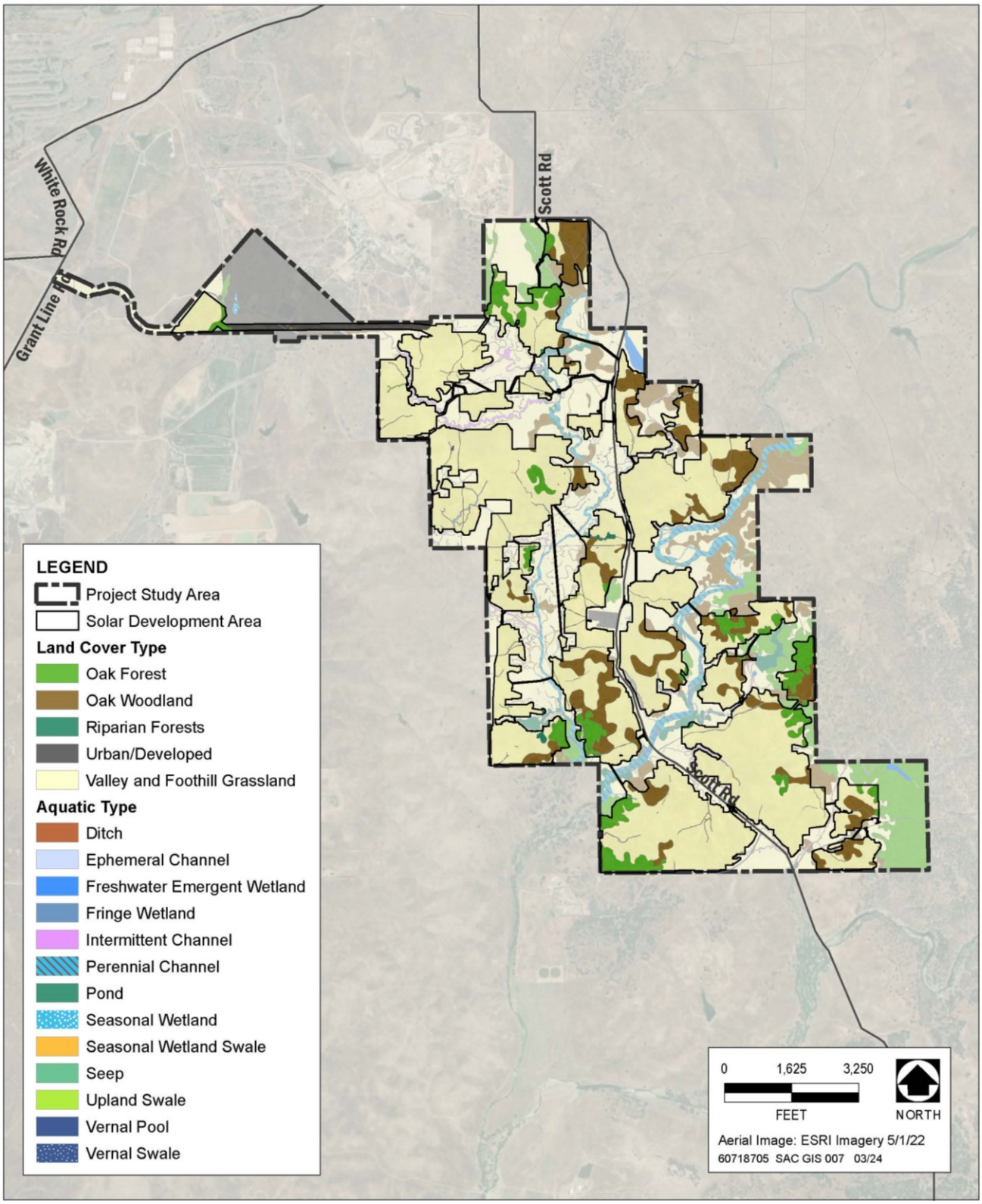
Vegetation and Land Cover

Terrestrial vegetation communities and land cover types were mapped within the project site in 2021 according to the Holland classification system (Holland 1986), after a review of the SSHCP Modeled Land Cover dataset for the area (Sacramento County 2018; USDA 2018). Following field surveys, a desktop evaluation was conducted, and vegetation and/or land cover classifications were additionally assigned based on the California Native Plant Society (CNPS) Manual of California Vegetation (CNPS 2023b). Vegetation and land cover types present in the project site include blue oak forest, blue oak woodland, riparian woodland/forest, urban/developed, and valley and foothill grassland. Aquatic cover types were identified based on an aquatic resources delineation completed by Dudek (see "Aquatic Features" below) (Appendix BR-1). Table BR-1 and Plate BR-1 identify vegetation communities, land cover types, and aquatic resources present within the solar development area and project site.

Aquatic Features

Dudek conducted an aquatic resources delineation within the project site between April and August 2021 (Appendix BR-1). 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), and/or the top of bank. Additional detail on delineation methods, survey conditions, and field datasheets are provided in Appendix BR-1. Table BR-1 and Plate BR-1 identify all aquatic resources delineated within the solar development area and project site. Potential State and federal jurisdictional wetlands and other waters present in the solar development area are further identified under "Waters of the United States and Waters of the State," below.

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



Sources: Appendix BR-1, Dudek 2024

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

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Upland Cover Types[2]					
Blue oak woodland (forest)	Present throughout the site, particularly in the south and east. Characterized by more than 10 percent canopy cover, primarily by blue oak *(Quercus douglasii*). Generally has a sparse shrub layer of scattered poison oak (*Toxicodendron diversilobum*) and coyote brush (*Baccharis pilularis*), and a well-developed valley and foothill grassland layer, interspersed with vernal pools and other wetland features. Other tree species present include foothill pine (*Pinus sabiniana*), interior live oak (*Quercus wislizenii*), valley oak (*Quercus lobata*), and California buckeye (*Aesculus californica*). Most closely resembles CNPS Manual of California Vegetation type *Quercus douglasii* forest and woodland alliance.	Blue oak woodland; mine tailing riparian woodland	101.00	161.83	262.83
Blue oak woodland	A transitional community between valley and foothill grasslands and blue oak woodland/forests. Characterized by a sparse (less than 10 percent) tree canopy of blue oaks ranging from scattered individuals and small clusters of trees, to small areas stands, like a savanna. Little to no shrub layer, but has a well-developed valley and foothill grassland layer. Most closely resembles CNPS Manual of California Vegetation type *Quercus douglasii* forest and woodland alliance.	Blue oak savanna	186.28	157.72	344.00
Riparian woodland/forest	Primarily concentrated along perennial, intermittent, and/or ephemeral channels; interspersed with blue oak woodland and forest throughout the site. Consists of an open-to-dense shrubby thicket dominated by a mixture of sandbar willow, arroyo willow (*S. lasiolepis*), red willow (*S. laevigata*), and immature stands of mixed various other riparian woodland tree species. Includes areas with a sub-canopy and understory of native and non-native species, including wild rose (*Rosa californica*), wild grape (*Vitis californica*), perennial pepperweed (*Lepidium latifolium*), Himalayan blackberry (*Rubus discolor*), curly dock (*Rumex crispus*), and various non-native grasses. Most closely resembles CNPS Manual of California Vegetation type *Quercus douglasii* forest and woodland alliance.	Mixed riparian scrub	4.19	28.36	32.55

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Valley and foothill grassland	Dominant vegetation community throughout the site. Annual herbaceous vegetation community characterized mostly by naturalized annual grasses, naturalized herbaceous annual forbs, and patches with relatively high proportions of native grasses and forbs. Composition varies with geographic and land use factors, such as rainfall, temperature, elevation, slope, aspect, grazing and other herbivory, and fire frequency and duration. Associated with vernal pools, and occurs as an understory within blue oak woodlands and forests, and riparian areas. Co-dominant, in places, with perennial grasses. For example, purple needlegrass (*Stipa pulchra*) can be found as the dominant grass (i.e., comprising greater than 20 percent cover) in small patches along ridgetops of low-lying hills within the site. Most closely resembles CNPS Manual of California Vegetation type *Avena* spp.- *Bromus* spp. herbaceous semi-natural alliance.	Valley grassland	1,088.42	676.31	1,764.73
Urban/Developed	Concentrated in the northwestern portion of the site, and near areas adjacent to Scott Road. Includes areas that have been completely altered by human activities and contain little to no vegetation, such as areas of low- and high-density residences and buildings, paved and gravel roadways, trails, gravel lots, recreational areas (i.e., Prairie City SVRA), and other constructed environments.	High density development; low density development; major roads; mine tailings; Recreational/ Landscaped	21.10	129.43	150.53
Aquatic Cover Types[3]					
Ditch	Present throughout the northeastern portion of the site. Either human-made or channelized natural features with intermittent hydrology intended for stormwater, agricultural, irrigation, runoff, or similar purposes. Vegetation in ditches varies from perennial rye grass, mouse barley, and prostrate knotweed (*Polygonum aviculare*), to a mix of upland and wetland vegetation along the bed and banks, to a fragmented riparian corridor comprised of large Fremont's cottonwood trees. Two ditches have potential downstream connectivity to Morrison Creek. Although inundation is visible on aerial imagery (Google Earth 2023), all ditches were dry during the field delineation. There is no continuous riparian corridor associated with these features on the site.	Stream/Creek	0.02	0.87	0.89

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Ephemeral Channel	Present throughout the site; many of which flow downstream into intermittent and perennial channels, while others connect swales and wetlands in larger complexes or are isolated. Consist of naturally occurring stream channels that contain flowing water during, and for a short duration after, precipitation events. Where vegetation was present, the ephemeral drainages contained a dominance of hydrophytic species like those described for seasonal wetlands and vernal pools. All ephemeral channels were dry at the time of the field delineation. There are no continuous riparian corridors associated with these features on the site.	Swale; Stream/Creek vernal pool invertebrate habitat	6.10	6.4	12.50
Intermittent Channel	Intermittent drainages on-site, including Little Deer Creek, are all tributary to the larger, perennial channels. Generally have flowing water during certain times of the year, when groundwater provides water for stream flow, and receive supplemental water from rainfall runoff. Somewhat similar to ephemeral channels, but characterized by deeper pools throughout. Inundation is visible on aerial imagery and standing water and/or saturation was present within low points or widenings of many of these features at the time of the field delineation.	Stream/Creek	0.38	20.07	20.45

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Perennial Channel	Carson Creek and its tributary, Coyote Creek, flow from north to south across the site. Carson Creek contained standing and/or flowing water, while Coyote Creek was mostly dry at the time of the field delineation except for standing water in deep plunge pools throughout. Open water within these features supported aquatic plants such as floating water primrose (*Ludwigia peploides;* OBL), Pacific mosquito fern (*Azolla filiculoides*; OBL), and hairy water clover (*Marsilea vestita;* OBL). Saturated areas below the OHWM supported wetland plant species like those within freshwater emergent wetlands, fringe wetlands, and seasonal wetlands. Below the top of bank, these features supported a mix of wetland and upland species, including portions of blue oak woodland, riparian woodland, and mixed riparian scrub. Approximately 2 miles south of the project site, Carson Creek converges with Deer Creek, a tributary to the Cosumnes River, a 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. Portions of the Carson Creek and Coyote Creek riverbeds consist of granite slabs and outcroppings characteristic of mine tailings and riparian woodland.	Stream/Creek	0.38	69.36	69.74
Upland Swale	Consist of linear topographic depressions that lack a distinct OHWM. These features contain a mild break in slope and a slight change in vegetation type and cover but do not support a dominance of wetland vegetation. Contain upland grasses and facultative wetland grasses, similar to that for valley and foothill grassland and seasonal wetlands.	Stream/Creek vernal pool invertebrate habitat	2.07	2.93	5.00
Freshwater Emergent Wetland	Occur on-site primarily below the OHWM of Carson Creek. Characterized by erect, rooted herbaceous hydrophytes and dominated by perennial plants such as hardstem bulrush (*Schoenoplectus acutus*), pale spike rush (*Eleocharis macrostachya*), and Baltic rush (*Juncus balticus*). Three of these features (FEW-1, FEW-2, and FEW-5), located outside of Carson Creek, are shallow impoundments constructed within natural drainages, generally for the purpose of supporting livestock; one additional freshwater emergent wetland (FEW-3) is the result of seepage from an upslope pond.	Freshwater marsh	0	8	8.00

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Fringe Wetland	Occur primarily along terraces of Coyote Creek and Carson Creek, and intermittent channels, within the site. Characterized by their proximity to intermittent and perennial channels and dominated by hydrophytic plants such as pale spike rush, perennial rye grass, annual semaphore grass (*Pleuropogon californicus* var*. Californicus*), narrowleaf plantain *(Plantago lanceolata),* white-tip clover *(Trifolium variegatum),* and low spearwort *(Ranunculus pusillus*). No surface water was present during the field delineation. One of these features abuts a pond (P-01) that is an impoundment of an intermittent drainage tributary to Coyote Creek.	Freshwater marsh	0.01	2.54	2.55
Pond	Three ponds in total occur in the western, northern, and eastern portion of the site. These features are natural closed depressions that have been artificially augmented by perennial water sources, generally for the purpose of supporting livestock. Pond-01 (P-01) in the west receives input from ephemeral features during rain events, outlets into an intermittent channel tributary to Coyote Creek, and supports a sparse riparian zone comprised of Goodding's willow (*Salix gooddingii*). Pond-02 (P-02) in the north and adjacent to Carson Creek is largely unvegetated and receives input from ephemeral features during rain events. Pond-03 (P-03) in the east is a large feature that receives intermittent flows from a drainage to the north and outlets into a drainage tributary to Carson Creek. It supports sparse broadleaf cattail (*Typha latifolia*) and swamp smartweed (*Persicaria amphibia*) along the margins, and a berm along the west side supports a dense thicket of Himalayan blackberry (*Rubus armeniacus*).	Open water	0.01	9.46	9.47

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Seasonal Wetland	Occur throughout the site; most are inundated seasonally, and some are connected via swales, ephemeral channels, and/or intermittent channels. Characterized by a distinct change in vegetation type and cover from the surrounding grassland. Dominated by facultative grasses, including perennial rye grass (*Festuca perennis*) and mouse barley (*Hordeum marinum)*. Saturation and deep cow hoof punches were present in many of the seasonal wetlands during the field delineation. Two seasonal wetlands (SW-90 and SW-121) in the northwestern portion of the site appear to be remnants of historical drainages, supporting a fragmented riparian corridor comprised of Fremont's cottonwood (*Populus fremontii*) and Goodding's willow trees with an understory of sandbar willow (*Salix exigua*), poison oak (*Toxicodendron diversilobum*), and Himalayan blackberry. These features do not appear to have hydrologic connectivity to any other aquatic resources, and any natural hydrology in this area has been disrupted by development and disturbance associated with the adjacent Prairie City SVRA.	Seasonal wetland	0.16	3.94	4.10
Seasonal Wetland Swale	Present throughout the northern and eastern portions of the site, primarily in association with the Coyote Creek drainage. 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; delineated by a mild break in slope and change in vegetation type and cover. Dominated by facultative wetland grasses. Saturation was present in some swales at the time of the field delineation.	Swale	1.38	9.88	11.26

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Seep	Three seeps occur within the eastern portion of the site where groundwater flows to the soil surface, either from a clearly defined opening or from a saturated area where water percolates slowly through the soil. These features are dominated by herbaceous hydrophytic plants such as annual rabbits foot grass (*Polypogon monspeliensis*), salt grass (*Distichlis spicata*), and Pacific foxtail (*Alopecurus saccatus*). Seep-01 (SP-01) appears to be fed by the adjacent Carson Creek. Seep-02 (SP-02) appears to be perennial and to have been artificially augmented for the purpose of supporting livestock; it contained standing water at the time of the field delineation, contributing flows to an intermittent channel tributary to Coyote Creek. Seep-03 (SP-03) is located within an intermittent channel. SP-01 and SP-03 were saturated at the time of the field delineation.	-	0.01	0.15	0.16
Vernal Pool	Found primarily in the interior portion of the site; isolated or connected to larger vernal complexes via swales. Characterized by an impermeable layer such as a hard pan that may fill and empty several times during the rainy season. Exhibit concentric rings of distinctly different vegetation cover and species composition, the center of which was generally devoid of vegetation due to prolonged inundation and surrounded by a predominance of hydrophytic species such as Great Valley eryngo (*Eryngium castrense*), Fremont's goldfields (*Lasthenia fremontii*), short woollyheads (*Psilocarphus brevissimus*), and needleleaf navarretia (*Navarretia intertexta*), as well as facultative grasses growing along the feature margins. Cow punches and evidence of grazing were documented in many of the vernal pools on-site, and some hydrology was disrupted by property fences and associated berms.	Vernal pool	0.17	3.4	3.57
Vernal swale	Primarily occurring within the western portion of the site. Characterized as shallow, seasonal conveyance channels connecting vernal pools or seasonal wetland swales and forming complexes. The hydrophytic vegetation species composition is like those described for vernal pools.	Swale	0.04	1.98	2.02

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	SSHCP Land Cover Type(s)[1]	Solar Development Area (Acres)	Adjacent Lands within Project Site (Acres)	Project Site (Total Acres)
Subtotal (Terrestrial)			1,400.99	1,153.65	2,554.64
Subtotal (Aquatic Resources)			10.73	138.97	149.70
Total			1,411.72	1,292.62	2,704.34

Source: Appendix BR-1

Notes:

1 Cover types are based on mapping and vegetation descriptions provided in the South Sacramento Habitat Conservation Plan (SSHCP) (County of Sacramento et al. 2018) and represent a cross walk from vegetation communities/land cover types used to characterize the project site and solar development area (see Notes 2 and 3, below).

2 Upland vegetation communities and landcover types are based on the Holand classification system (Holland 1986).

3 Aquatic cover types are based on the aquatic resources delineation completed by Dudek (Appendix BR-1) and the Cowardin classification system (USFWS 2013).

CNPS = California Native Plant Society
FEW = freshwater emergent wetland
OBL = Obligate
OHWM = ordinary high-water mark
SSHCP = South Sacramento Habitat Conservation Plan
SVRA = State Vehicular Recreation Area

Native and Non-Native Trees

A tree survey was conducted by a certified arborist on various dates during the spring and summer of 2021, 2022, and 2023 (Appendix BR-1) to inventory all trees within the solar development area and project site and to identify their species, diameter (at breast height), canopy radius (i.e., protected root zone), critical root zone, and condition rating. Trees protected by the Sacramento County General Plan Policy CO-138 and CO-139 were also identified. A report detailing the tree inventory methods, data collection, results, and recommended actions is provided in Appendix BR-1. A total of 7,475 individual trees were recorded within the project site. Table BR-2 summarizes the tree inventory for the solar development area and project site.

Table BR-2: Summary of Tree Inventory within the Solar Development Area and Project Site

Tree Species	Project Site		Solar Development Area[1]	
	Number of Trees Inventoried	Number of Protected Status Trees[2]	Number of Trees Inventoried	Number of Protected Status Trees[2]
black walnut (*Juglans* sp.)	1	1	0	0
blue oak (*Quercus douglasii*)	6,834	6,391	4,554	4,259
California buckeye (*Aesculus californica*)	22	8	3	1
California sycamore (*Platanus racemose*)	6	0	0	0
Chinese pistache (*Pistacia chinensis*)	4	0	0	0
Coulter pine (*Pinus coulteri*)	14	0	0	0
Unknown elderberry (*Sambucus* sp.)	67	0	5	0
Fremont cottonwood (*Populus fremontii*)	77	23	6	5
fruit tree species (*Prunus* sp.)	3	1	3	1
interior live oak (*Quercus wislizeni*)	102	88	41	38
Unknown oak (*Quercus* sp.)	31	26	24	19
Pacific willow (*Salix lasiandra*)	1	0	0	0
silver maple (*Acer saccharinum*)	1	0	1	0
toyon (*Heteromeles arbutifolia*)	5	0	0	0
valley oak (*Quercus lobata*)	168	163	80	78
Unknown willow (*Salix* spp.)	67	44	1	0
unknown tree	72	50	69	49
Total	**7,475**	**6,795**	**4,787**	**4,450**

Source: Appendix BR-1
Notes:
DBH = diameter at breast height
1 All trees inventoried within the solar development area are proposed for removal.
2 Protected under Sacramento County General Plan, including any oak species measuring a minimum of 6 inches DBH (single tree) or 10 inches DBH (aggregate of multi-truck trees); heritage and landmark trees of any species with a DBH equal to or greater than 19 inches DBH (single tree); and trees within an aquatic resource feature or within 50 feet from an aquatic resource feature ordinary high water mark/top of bank; protected trees include trees that are of any arborist condition rating, including those that are dead.

A total of 6,795 trees protected under the Sacramento County General Plan, including some trees that are dead or in severe decline, were identified during the tree inventory within portions of the project site, 4,450 of which are within the solar development area and proposed for removal. The entirety of the project site was not surveyed for individual trees.

A total of 54.6 acres of oak tree canopy occurs within the solar development area.

Special-Status Species

Special-status species considered in this environmental impact report (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);
- 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, such as species protected under the California Fish and Game Code.

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 solar development area, CRPR Rank 3 and 4 species were considered "special-status" in this EIR analysis.

A list of special-status species with potential to occur within the solar development area, provided suitable habitat conditions are present, was developed through review of previous environmental reviews conducted for other projects in the vicinity; current CNDDB and CNPS Rare Plant Inventory searches (CDFW 2024e; CNPS 2024); a list of federally listed species with potential to occur within the biological resources study area obtained from the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (USFWS 2024); and the SSHCP (County of Sacramento et al. 2018). The CNDDB and CNPS Inventory search included the Folsom SE and Buffalo Creek 7.5-minute United States Geographic Survey (USGS) quadrangles within which the solar development area occurs, plus the immediately adjacent surrounding quadrangles (Carmichael, Latrobe, Carbondale, Folsom, Clarksville, and Sloughhouse).

The project site is situated in the northeastern portion of the SSHCP Plan Area. As discussed in the "Regulatory Setting" section below, the majority of the solar development area (1,252 acres) is located outside of the urban development area. Solar development is not a covered activity under the SSHCP. Therefore, the project would not be subject to receive take coverage under the SSHCP and is not required to implement or comply with the provisions of the SSHCP. The project site contains documented occurrences for several SSHCP Covered Species, including legenere (*Legenere limosa*), vernal pool fairy shrimp (*Brachinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), western spadefoot (*Spea hammondii*), western pond turtle (*Emys marmorata*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Sacramento Orcutt grass (*Orcuttia viscida*), slender Orcutt grass (*Orcuttia tenuis*), Ahart's dwarf rush (*Juncus leiospermus var. ahartii*), Boggs lake hedge hyssop (*Gratiola heterosepala*), American badger (*Taxidea taxus*), and all the bird Covered Species, except greater sandhill crane (County of Sacramento, et al. 2018). The portion of the Habitat Conservation Plan (HCP) Plan Area where the project site is located is considered highly valuable for vernal pool ecosystems and encompasses the majority of blue oak woodland and forest present in the Plan Area.

To assist in identifying special-status species that are present or could occur in the solar development area or vicinity, focused protocol-level rare plant and special-status wildlife surveys were conducted for the project from 2021 through 2024. A detailed description of survey methods and results are provided in Appendix BR-1. Rare plant surveys were conducted in 2021, 2022, 2023, and 2024 in accordance with current USFWS (2000), CDFW (2018) and CNPS guidelines (2001); reference populations were visited prior to each year's survey to ensure target species were evident and identifiable. Surveys were conducted across a range of water year types. The year of 2021 was relatively dry; 2022 was slightly above average for precipitation in the region, 2023 was exceptionally wet, with rainfall amounts approximately 175 percent of average, and 2024 water year continued to have above average precipitation with it being about 161 percent of average. Protocol-level and focused surveys were completed for the following special-status wildlife species:

- burrowing owl (breeding season and wintering season survey),
- Crotch's bumble bee (habitat assessment)
- Swainson's hawk (breeding season survey and habitat assessment),

- tricolored blackbird (breeding season survey),
- valley elderberry longhorn beetle (exit hole surveys)
- western spadefoot (upland burrow surveys, breeding season larval surveys, habitat assessment, and nocturnal eye shine),

Plate BR-2 shows all CNDDB-recorded occurrences, essential fish habitat (EFH), and designated critical habitat present in and 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 solar development area. See Appendix BR-2 for species considered but eliminated from further analysis. Observations of special-status species, as well as other incidental observations during field surveys are listed in Appendix BR-1.

SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and may be vulnerable to effects of development projects. Sensitive natural communities are those that are listed in the CDFW CNDDB and in the Natural Communities List as having a rarity rank of S1 through S3 (CDFW 2023) due to the rarity of the community in the state or throughout its entire range (i.e., globally), or that have been afforded protection under local plans (e.g., Sacramento County General Plan); 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.

The following sensitive natural communities, as defined above, are present in the solar development area and are described in more detail in the sections that follow: vernal pools (i.e., resembling Northern hardpan vernal pools); potentially jurisdictional waters of the U.S. and of the State; annual grasslands that provide suitable foraging habitat for Swainson's hawk, white-tailed kite, and grassland-specialized birds (Grassland Bird Habitat), recognized by CDFW as becoming increasingly rare and showing greater declines when compared to other bird groups [CDFW 2023]; riparian habitat; valley needlegrass grassland (as a minor component of the valley and foothill grassland community); and oak woodlands (i.e., blue oak woodland, blue oak woodland [forest]).

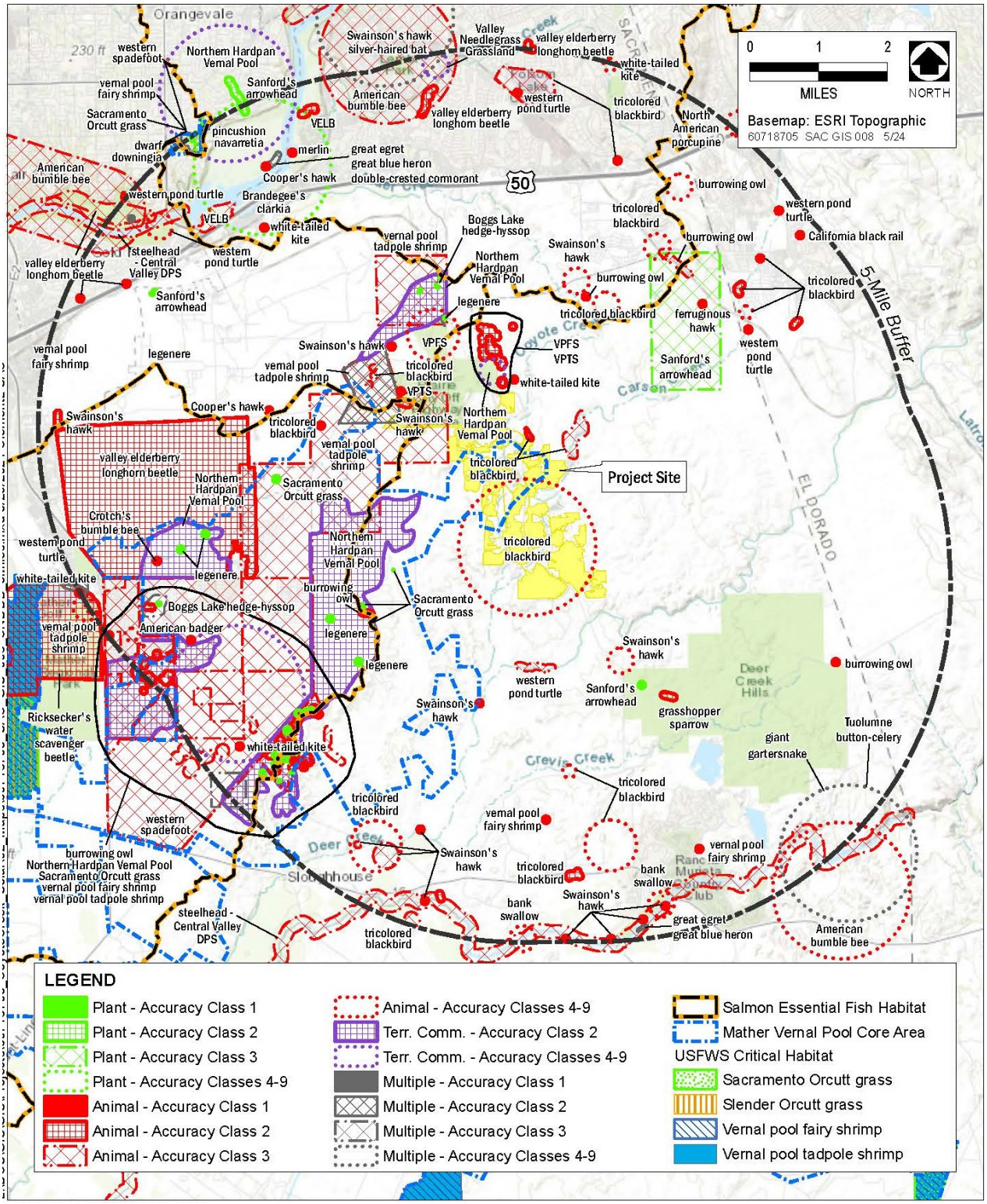
NORTHERN HARDPAN VERNAL POOL

Northern hardpan vernal pool habitat is mapped within five miles of the solar development area; the closest occurrence is less than one-quarter mile to the north (Plate BR-2). While this specific sensitive community type has not been confirmed to be present on-site, vernal pool habitat present within the solar development area 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 pools are also wetlands, described as a sensitive community type under "Waters of the United States and Waters of the State," below.

WATERS OF THE UNITED STATES AND WATERS OF THE STATE

Jurisdictional wetlands and other waters of the United States 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.

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



Source: CDFW 2024e (March 2024 CNDDB)

Table BR-3 and Table BR-4 identify special-status plants and special-status wildlife, respectively, with potential to occur within the solar development area. As noted above, Appendix BR-2 includes a full list of species considered but eliminated from further analysis. Observations of special-status species, as well as other incidental observations during field surveys are listed in Appendix BR-1. The potential to occur for each species is identified in the far-right column, and each category is defined as follows:

- **Known to occur:** The species 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 vicinity and the project site is within the known range of the species, but habitat for the species is of low quality.
- As described under “Aquatic Features,” above, an aquatic resources delineation was conducted for the project by Dudek (Appendix BR-1). Dudek’s preliminary assessment identified all wetlands and other waters present within the solar development area (10.74 acres) to be potential Waters of the U.S. and State. Because jurisdiction has not been verified by regulatory agencies, all aquatic features within the solar development area (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.
- Grassland Bird Habitat
  - Grasslands occur throughout the solar development area. 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, such as is the case in and surrounding the project site, their ecological value increases.
- Riparian Habitat
  - Riparian habitat (i.e., riparian woodland/forest) is interspersed with blue oak woodland and forest throughout the solar development area, where it occurs along perennial, intermittent, or ephemeral drainages (see Plate BR-1). Riparian vegetation is vegetation which occurs along a waterway and is dependent on and/or occurs because of the surface and subsurface hydrology of the waterway itself (USFWS 2025) 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 woodland/forest is provided in Appendix BR-1.

Table BR-3: Special-Status Plants with Potential to Occur within the Solar Development Area

Scientific Name	Common Name	Listing Status (Federal/State/ CRPR/SSHCP)	Habitat Requirements/Blooming Period/Elevation Range (Feet)	Potential to Occur
Brodiaea rosea ssp. *vallicola*	valley brodiaea	None/None/4.2/ None	Valley and foothill grassland Vernal pools; alluvial terraces, gravelly, sandy microhabitats/ April–May (June)/35–1,100.	**Present.** Valley brodiaea species was not observed during protocol-level botanical surveys in 2021, 2022, or 2023; but was observed in 2024. Valley brodiaea were observed primarily on the surrounding upland banks to ephemeral channels and swales. Dudek 2024).
Calycadenia spicata	spiked western rosinweed	None/None/1B.3 /None	Cismontane woodland and valley and foothill grassland; soils generally dry, adobe (heavy clay) or stony to gravelly clay; May–September/130–4,595	**Known to occur.** The project site is within the known range of the species, and habitat for the species is present; specifically, grassland habitat. One CNPS observation was recorded approximately one mile north of the project site, in 2021 (CNPS 2023c). This species was observed during protocol-level survey conducted by Dudek in 2023.
Downingia pusilla	dwarf downingia	None/None/2B.2 / Covered	Valley and foothill grassland (mesic), Vernal pools/annual herb; Mar–May/3–1,455.	**High.** The project site is within the known range of the species, and habitat for the species is present. Specifically, suitable grassland and vernal pool habitat occurs within the southern and western portions of the project site. Additionally, SSHCP modeled habitat for this species is present within the northwest portion of the project site (Sacramento County 2018). The nearest known occurrence for this species is approximately five miles northwest of the project site, at the Phoenix Park east of Fair Oaks (CDFW 2024e, CNPS 2023c).
Fritillaria agrestis	stinkbells	None/None/4.2/ None	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland; clay, serpentine (sometimes) soil/March-June/35-5,100	**Low.** Habitat for the species in the project site is present; however, there are no documented CNDDB occurrences of this species within five miles of the PSA (CNPS 2023c).
Gratiola heterosepala	Boggs Lake hedge-hyssop	None/SE/1B.2/ Covered	Marshes and swamps (lake margins), Vernal pools; clay/annual herb/Apr–Aug/33–7,790.	**Moderate.** The project site is within the known range of the species, and suitable habitat for the species is present. Specifically, within the project site suitable habitat for this species is located throughout the vernal pools, wetlands swales and seasonal wetlands that occur on site. Additionally, SSHCP modeled habitat for this species is present within the project site (Sacramento County 2018). The nearest known occurrence for this species is approximately two miles northwest of the project site, near the intersection of Prairie City Road and White Rock Road (CDFW 2024e, CNPS 2023c).

Scientific Name	Common Name	Listing Status (Federal/State/ CRPR/SSHCP)	Habitat Requirements/Blooming Period/Elevation Range (Feet)	Potential to Occur
Hesperevax caulescens	hogwallow starfish	None/None/4.2/ None	Valley and foothill grassland and vernal pools; alkaline microhabitats; March–June/0–1,655.	**Low.** Habitat for the species in the project site is present; however, the nearest CNPS observation was recorded approximately three miles southwest of the project site (CNPS 2023c).
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	None/None/1B.2 /None	Marshes and swamps (freshwater); Often in riprap on sides of levees/perennial rhizomatous herb (emergent)/June–Sep/0–395.	**Low.** Habitat for the species in the project site is minimal and of low quality. There are no documented CNDDB occurrences of this species within five miles of the PSA, the nearest known occurrence for this species is recorded in the Florin USGS 7.5-Minute Quad (CNPS 2023c).
Iris longipetala	coast iris	None/None/4.2/ None	Coastal prairie, lower montane coniferous forest, meadows and seeps/March-May(June)/0–1,970.	**Low.** Habitat for the species in the project site is minimal and of low quality. There are no documented CNDDB occurrences of this species within five miles of the PSA (CNPS 2023c).
Juncus leiospermus var. *ahartii*	Ahart's dwarf rush	None/None/1B.2 / Covered	Valley and foothill grassland (mesic)/annual herb/Mar–May/98–750.	**Known to occur.** This species has not been documented in the vicinity of the project site but is within the known range of the species, and habitat for the species is present within the project site. Specifically, within the project site suitable grassland habitat for this species is located within the southern and western portions of the project site. Additionally, SSHCP modeled habitat for this species is present within the project site (Sacramento County 2018). This species was observed during protocol-level survey conducted by Dudek in 2023.
Legenere limosa	legenere	None/None/1B.1 / Covered	Vernal pools/annual herb/Apr–June/3–2,885.	**High.** This species has been documented approximately 3 miles southwest of the PSA in the Buffalo Creek USGS 7.5-Minute Quad (CDFW 2024e). Specifically, within the project site suitable grassland habitat for this species is located within the southern and western portions of the project site. Additionally, SSHCP modeled habitat for this species is present within the project site (Sacramento County 2018)).
Lepidium latipes var. *heckardii*	Heckard's pepper-grass	None/None/1B.2 /None	Valley and foothill grassland (alkaline flats)/annual herb/Mar–May/7–655.	**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 recorded in the Florin USGS 7.5-Minute Quad (CNPS 2023c).

Scientific Name	Common Name	Listing Status (Federal/State/ CRPR/SSHCP)	Habitat Requirements/Blooming Period/Elevation Range (Feet)	Potential to Occur
Navarretia eriocephala	hoary navarretia	None/None/4.3/ None	Cismontane woodland and valley and foothill grassland; vernally mesic microhabitats/May-June/345–1,310.	**Low.** Habitat for the species in the project site is present; however, the nearest CNPS observation was recorded approximately two miles east of the project site in 1953 (CNPS 2023c).
Navarretia myersii ssp. *myersii*	pincushion navarretia	None/None/1B.1 / Covered	Vernal pools; often acidic/annual herb/Apr–May/66–1,080.	**Known to occur.** The project site is within the known range of the species, and habitat for the species is present. Specifically, within the project site, suitable habitat for this species is located within the vernal pools, wetland swales, and seasonal wetlands that are present within the project site. Additionally, the Hadselville-Pentz and Redding Gravelly Loam soil complexes within the project site are slightly acidic, therefore vernal pools located in these soils provide potential suitable habitat. Additionally, SSHCP modeled habitat for this species is present within the project site (Sacramento County 2018). This species was observed during protocol-level surveys conducted by Dudek in 2023).
Orcuttia tenuis	slender Orcutt grass	FT/SE/1B.1/ Covered	Vernal pools; Often gravelly/annual herb/May–Sep (Oct)/115–5,770.	**Moderate.** The project site is within the known range of the species, and habitat for the species is present. Specifically, within the project site, suitable habitat for this species is located within the vernal pools, wetland swales, and seasonal wetlands that are present within the project site. Additionally, SSHCP modeled habitat for this species is present within the project site (Sacramento County 2018). Designated Critical Habitat (DCH) for this species is located approximately 4.20 miles northwest of the project site. This species has been documented once within five miles of the project site, southwest of the project site, east of the Mather Air Force Base in Rancho Cordova (CDFW 2024e, CNPS 2023c, USFWS 2023b).

Scientific Name	Common Name	Listing Status (Federal/State/ CRPR/SSHCP)	Habitat Requirements/Blooming Period/Elevation Range (Feet)	Potential to Occur
Orcuttia viscida	Sacramento Orcutt grass	FE/SE/1B.1/Covered	Vernal pools/annual herb/Apr–July (Sep)/98–330.	**Moderate.** The project site is within the known range of the species, and habitat for the species is present. Specifically, within the project site, suitable habitat for this species is located within the vernal pools, wetland swales, and seasonal wetlands that are present within the project site. Additionally, SSHCP modeled habitat for this species is present within the project site (Sacramento County 2018). DCH for this species is located approximately 4.8 miles northwest of the project site. There are several documented occurrences of this species within five miles west and southwest of the project site, with the nearest known occurrence near Keifer Landfill, east of Grant Line Road (CDFW 2024e, CNPS 2023c, USFWS 2023b).
Sagittaria sanfordii	Sanford's arrowhead	None/None/1B.2 / Covered	Marshes and swamps (assorted shallow freshwater)/perennial rhizomatous herb (emergent)/May–Oct (Nov)/0–2,130.	**Low.** The project site is within the known range of the species, and habitat for the species is present, however minimal and of low quality. Specifically, within the project site, there is limited and low-quality habitat for this species (perennially inundated habitat). However, SSHCP modeled habitat for this species is present within the project site (Sacramento County 2018). This species has been documented within five miles of the project site, northeast of the project site, along tributaries to Carson Creek that are south of White Rock Road (CDFW 2024e, CNPS 2023c).
Trichostema rubisepalum	Hernandez bluecurls	None/None/4.3/ None	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, vernal pools; gravelly, serpentine (sometimes), volcanic (sometimes) /June-August/985-4,710	**Low.** The project contains suitable habitat for the species, however minimal and of low quality. There are no documented CNDDB occurrences of this species within five miles of the PSA (CDFW 2024e).
Trifolium hydrophilum	saline clover	None/None/1B.2 /None	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools/annual herb/Apr–June/0–985.	**High.** The species has not been documented in the project site but is known to occur within five miles and species habitat is present. The nearest known occurrence for this species is recorded in the Florin USGS 7.5-Minute Quad, approximately three miles south of the project site (CNPS 2023c).

Scientific Name	Common Name	Listing Status (Federal/State/ CRPR/SSHCP)	Habitat Requirements/Blooming Period/Elevation Range (Feet)	Potential to Occur
Wyethia reticulata	El Dorado County mule ears	None/None/1B.2 /None	chaparral, cismontane woodland, lower montane coniferous forest, vernal pools; clay (sometimes) /April-August/605-2,065	**Low.** The project contains suitable habitat for the species, however minimal and of low quality. There are no documented CNDDB occurrences of this species within five miles of the PSA (CDFW 2024e).

Sources: Appendix BR-1; Calflora 2024, CDFW 2024e, CNPS 2024; Jepson eFLora 2023; County of Sacramento et al. 2018; USDA 2023; USFWS 2024

Notes for Table BR-3:

CDFW: California Department of Fish and Wildlife
CNDDB: California Natural Diversity Database
CNPS: California Native Plant Society
CRPR = California Rare Plant Rank
DCH; Designated Critical Habitat
PSA = project study area
SSHCP: South Sacramento Habitat Conservation Plan
USFWS: U.S. Fish and Wildlife
USGS: U.S. Geological Survey
FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State listed as endangered
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.
4: Plants of limited distribution–A Watch List.
Threat Rank
0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat).
0.2: Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat).
0.3: Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known).
None = No conservation status.
SSHCP (South Sacramento Habitat Conservation Plan)
Covered: Currently listed as threatened or endangered under the California Endangered Species Act (ESA) or the federal ESA and covered within the Plan Area by the SSHCP.
None: Not covered under the SSHCP.
Potential for Occurrence Definitions:
Known to occur: The species 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 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 with Potential to Occur within the Solar Development Area

Scientific Name	Common Name	Listing Status (Federal/State/SSHCP)	Habitat Requirements	Potential to Occur
Amphibians				
Rana boylii	Foothill Yellow-legged Frog (South Sierra Distinct Population Segment)	FE/SE/None	Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. Sea level to 6,000 ft.	**Low.** There is little suitable habitat for the species within the project site, at rocky streams within forest and woodland land cover. Further, there are no known occurrences of this species within five miles of the project site (CDFW 2024e).
Spea hammondii	western spadefoot toad (WST)	PX/SSC/Covered	Primarily grassland and vernal pools, but also in ephemeral wetlands and drainages that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture. Prefers open areas with sandy or gravelly soils. Aestivates within rodent burrows in upland habitats near temporary aquatic breeding sites.	**High.** This species has not been documented in the project site; however, this species is known to occur in the vicinity of the project site and suitable habitat is present. Additionally, SSHCP modeled foraging and aestivation habitat is present within the project site (Sacramento County 2018). There are known occurrences for this species within five miles of the project site, located on the west side of Grant Line Road, north of State Route 16 (CDFW 2024e). The nearest known occurrence for this species is recorded in an area that is bordered by Sunrise Boulevard, State Route 16, Grant Line Road, and Douglas Road in the city of Rancho Cordova (CDFW 2024e). No WST were identified during focused field studies conducted by Dudek in 2021.
Reptiles				
Actinemys marmorata	western pond turtle	PX/SSC/Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter.	**Known to occur.** Various occurrences of this species have been documented within the project site, specifically along or near Carson Creek (Dudek 2024e). Additionally, suitable aquatic and upland habitat is present within the project site and SSHCP modeled aquatic and upland habitat is present within the project site (Sacramento County 2018). There are also known occurrences for this species within two miles of the project site, located within Deer Creek south of the project site (CDFW 2024e). Four individuals were observed during Dudek reconnaissance surveys.

Scientific Name	Common Name	Listing Status (Federal/State/SSHCP)	Habitat Requirements	Potential to Occur
Birds				
Accipiter cooperii (nesting)	Cooper's hawk	None/WL/Covered	Nests in mixed and deciduous forests, open woodlands, small woodlots, riparian woodlands, open and pinyon woodlands, and forested mountainous regions.	**Low.** This species has not been documented in the project site and suitable nesting habitat is minimal. There is a known occurrence for this species approximately two miles west of the project site (CDFW 2024e).
Agelaius tricolor (nesting colony)	tricolored blackbird (TRBL)	BCC/SSC, ST/Covered	Nests near freshwater, emergent wetland with cattails or tulles, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture.	**Known to occur.** Quality suitable habitat is present within the project site for this species. Additionally, SSHCP has modeled nesting and foraging habitat within the project site (Sacramento County 2018). There are several known occurrences of this species that overlap with the project site boundary, specifically throughout the entirety of the southern extent of the project site, and several documented occurrences within the immediate vicinity (CDFW 2024e). A vocalization of this species was documented within the project site, west of Coyote Creek, during TRBL focused surveys conducted by Dudek in 2021. No nesting activity was observed during these surveys.
Ammodramus savannarum (nesting)	grasshopper sparrow	None/SSC/None	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	**Moderate.** This species has not been documented within the project site. However, this species is known to occur in the vicinity of the project site, and suitable grassland habitat is present. There are known occurrences for this species within two miles southeast of the project site, with the nearest known occurrence a half mile north of Latrobe Road and a half mile east of Scott Road (CDFW 2024e).
Aquila chrysaetos (nesting and wintering)	golden eagle	BCC, FP/FP/None	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats.	**Known to occur.** The project site provides marginal foraging habitat for this species, and in general habitat is either absent or of low quality. This species was observed foraging and in flight in the western vicinity of the project site during field surveys conducted by Dudek in 2021. Based on the USFWS IPaC Report, this species has the potential to occur on or near the project site (CDFW 2023e, USFWS 2023b), however, there are no documented occurrences of this species within five miles of the project site (CDFW 2024e).

Scientific Name	Common Name	Listing Status (Federal/State/SSHCP)	Habitat Requirements	Potential to Occur
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl (BUOW)	BCC/SCE/Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows.	**High.** The project site contains suitable open grassland habitat with ground squirrel burrows to support this species. Additionally, SSHCP modeled habitat occurs within the project site (Sacramento County 2018). A ground-perching BUOW was observed during protocol-level surveys by Dudek in 2021 (Dudek 2024). Additionally, several potential burrows were discovered with BUOW sign (owl pellet, whitewash, etc.).
Buteo regalis (nesting)	ferruginous hawk	None/WL/Covered	Nests in grasslands, prairie, sagebrush steppe, scrubland, and pinyon-juniper woodland edges.	**Low.** This species has not been documented in the project site as suitable nesting habitat is minimal. There is a known occurrence for this species approximately three miles northeast of the project site (CDFW 2024e).
Buteo swainsoni (nesting)	Swainson's hawk (SWHA)	BCC/ST/Covered	Nests in riparian, open woodland, and savanna, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture.	**Known to occur.** SWHA have been observed within the project site during reconnaissance-level surveys in 2021 and focused surveys in 2023. No confirmed active SWHA nests documented within the project site during the site surveys. Additionally, SSHCP modeled foraging habitat occurs within the project site (Sacramento County 2018). Occurrences of nesting or suspected nesting for this species have been recorded at the confluence of Deer Creek and Carson Creek to the southwest, along Scott Road approximately 1 mile southeast, and east of White Rock Road within approximately 1 mile from the north northwestern boundary of the project site (CDFW 2024e, USFWS 2023b) .
Elanus leucurus (nesting)	white-tailed kite	None/FP/None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands.	**Known to occur.** The project site contains suitable nesting and foraging habitat for this species. Additionally, SSHCP modeled habitat occurs within the project site (Sacramento County 2018). Various occurrences of this species have been documented in various locations within the project site (Dudek 2024). Additionally, there are several known occurrences within the immediate vicinity (CDFW 2024e).
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	BCC/SSC/None	Nests and forages in emergent wetlands including woody swamp, brackish marsh, and freshwater marsh.	**Low.** The project site provides suitable foraging habitat for this species, however nesting habitat is limited, and in general habitat is minimal and of low quality. There are no documented occurrences within five miles of the project site (CDFW 2024e). Based on the USFWS iPaC Report, this species has the potential to occur on or near the project site (CDFW 2024e, USFWS 2023b).

Scientific Name	Common Name	Listing Status (Federal/State/SSHCP)	Habitat Requirements	Potential to Occur
*Haliaeetus leucocephalus (*nesting and wintering*)*	bald eagle	FDL, BCC/ SE/None	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains.	**Known to occur.** Nesting habitat for the species is either absent or of low quality, however foraging habitat for this species is present within the project site. There are no known CNDDB occurrences of this species within five miles of the project site (CDFW 2024e, USFWS 2023b), however, this species was observed in various locations throughout the project site. This species was observed foraging along or near Carson Creek during the reconnaissance-level surveys conducted by Dudek in 2021.
Laterallus jamaicensis coturniculus	California black rail	BCC/FP, ST/None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations.	**Low.** Habitat for the species within the project site is minimal and of low quality. The nearest known occurrence for this species is recorded along Blackstone Parkway, approximately one mile southeast of White Rock Road at Latrobe Road (CDFW 2024e, USFWS 2023a).
Riparia riparia (nesting)	bank swallow	None/ST/None	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration.	**High (foraging).** The project site provides suitable migratory and foraging habitat for this species, but the site is outside of the known breeding range. There are no known occurrences of this species within five miles of the project site (CDFW 2024e). The nearest known occurrence is recorded on the Consumes River, nearly 5 miles south of the project site (CDFW 2024e).
Invertebrates				
Bombus crotchii	Crotch's bumble bee	None/SCE/None	Open grassland and scrub habitats. This species is classified as a short-tongued species, whose food plants include milkweed (*Asclepias* sp.), pincushion (*Chaenactis* sp.), lupine (*Lupinus* sp.), clover (*Medicago* sp.), Phacelia, and sage (*Salvia* sp.). Nests are often located underground in abandoned rodent nests, or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees.	**Moderate.** The project site is within the known range of the species, and suitable habitat for the species is present, specifically open grassland habitat with floral resources to support this species. The nearest known occurrence for this species is within 4.7 miles west of the project site, northwest of Douglas Boulevard at Jaeger Road, approximately three miles southeast of White Rock Road (CDFW 2024e).

Scientific Name	Common Name	Listing Status (Federal/State/SSHCP)	Habitat Requirements	Potential to Occur
Branchinecta lynchi	vernal pool fairy shrimp	FT/None/Covered	Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats.	**Known to occur.** The project site contains suitable vernal pool habitat to support this species, and SSHCP modeled habitat is present within the project site (Sacramento County 2018). Occurrences of this species have been recorded along the western portion of the gen-tie alignment route in the northwest vicinity of the project site (CDFW 2024e, USFWS 2023b). Additionally, there are several known occurrences of this species within five miles of the project site, several of which are in occupied pools immediately north of the project site (CDFW 2024e). The nearest DCH unit for vernal pool fairy shrimp is approximately five miles west of the project site (USFWS 2023b).
Danaus plexippus	Monarch butterfly	PX/None/None	Host plant milkweed (*Asclepias* spp.). Nectaring plants with the most observations include: blazing stars (*Liatris* spp.), beggarticks (*Bidens* spp.), thistles (*Circium*, spp.), crownbeards or wingstems (*Verbesina* spp.), goldenrods (*Solidago* and *Oligoneuron* spp.), and asters (*Symphotrichum* spp.).	**Low/Moderate.** The project site is within the known range of the species, and suitable host plants (i.e., milkweed), as well as nine additional known nectaring plants for this species were observed within the project site during project-related field surveys. However, the extent to which suitable habitat is present throughout the project site and solar development area are unknown. The nearest known occurrence for this species is approximately 8.5 miles northeast of the project site, in the Cameron Park, California vicinity (milkweed mapper website). According to the December 2024 Dudek Biological Technical Report Appendix E, milkweed has not been observed within the study area.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle (VELB)	FT/None/Covered	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*).	**Moderate.** The project site is within the known range of this species. There is suitable habitat for this species within the project site, specifically observed elderberry shrubs (*Sambucus* sp.) within riparian and upland habitats. Additionally, small patches of SSHCP modeled habitat occur within the project site (Sacramento County 2018). This species has been documented within five miles of the project site, west of the project site, between White Road and Douglas Road (CDFW 2024e, USFWS 2023b).

Scientific Name	Common Name	Listing Status (Federal/State/SSHCP)	Habitat Requirements	Potential to Occur
Lepidurus packardi	vernal pool tadpole shrimp	FE/None/Covered	Ephemeral freshwater habitats including alkaline pools, clay flats, vernal lakes, vernal pools, and vernal swales.	**Known to occur.** The project site contains suitable vernal pool habitat to support this species, and SSHCP modeled habitat is present within the project site (Sacramento County 2018). Occurrences of this species have been recorded along nearly the entirety of the gen-tie alignment route in the northwest vicinity of the project site (CDFW 2024e, USFWS 2023b). Additionally, there are several known occurrences of this species within five miles of the project site, several of which are in occupied pools immediately north of the project site (CDFW 2024e). The nearest DCH unit for vernal pool tadpole shrimp is approximately five miles west of the project site (USFWS 2023b).
Mammals				
Taxidea taxus	American badger	None/SSC/Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils.	**High.** This species has not been documented within the project site. However, this species is known to occur in the vicinity of the project site, and suitable grassland habitat and SSHCP modeled habitat is present (Sacramento County 2018). The nearest known occurrence for this species is recorded a half mile east of Sunrise Boulevard, and one mile south of Douglas Road in the city of Rancho Cordova (CDFW 2024e).

Sources:
Appendix BR-1; CDFW 2023, CDFW 2024e, Dudek 2024, Dudek 2024e, NOAA 2023, Sacramento County 2018, USFWS 2013, USFWS 2023a, USFWS 2023b.

Notes for Table BR-4:

BUOW: burrowing owl
CNDDB: California Natural Diversity Database
DCH = Designated Critical Habitat
ft.: feet
IPaC: Information, Planning, and Conservation System
SWHA: Swainson's hawk
TRBL: tricolored blackbird
VELB: valley elderberry longhorn beetle
WST: western spadefoot toad
USFWS: U.S. Fish and Wildlife Service

Federal Status
BCC: USFWS Bird of Conservation Concern
FDL: Federally delisted
FE: Federally listed as endangered
FP: Federally Protected
FT: Federally listed as threatened
PX: Federally listed as proposed

State Status
FP: Fully protected
SCE: State Candidate Endangered
SE: State listed as endangered
SSC: Species of Special Concern
ST: State listed as threatened
WL: Watch List
None: No conservation status

SSHCP (South Sacramento Habitat Conservation Plan)
Covered: Currently listed as threatened or endangered under the California Endangered Species Act (ESA) or the federal ESA and covered within the Plan Area by the SSHCP.
None: Not covered under the SSHCP.

Potential for Occurrence Ranks
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 vicinity and the project site is within the known range of the species, but habitat for the species is either absent or of low quality.

VALLEY NEEDLEGRASS GRASSLAND

Valley needlegrass grassland is mapped within five miles of the solar development area; the closest occurrence is approximately 4.5 miles to the north (Plate BR-2). According to Holland (1986), this sensitive vegetation community is dominated by perennial, tussock-forming *Stipa (Nassella) pulchra*, with native and introduced annuals occurring between the perennials. It often intergrades with oak woodlands on moist, well-drained sites. The CNPS Manual of California Vegetation (CNPS 2023a) type that most closely resembles this sensitive community type is Needle grass – Melic grass grassland, which recognizes additional species, such as *Nassella cernua*, as characteristic of this sensitive community type. Vernal pools and seasonal wetlands within the solar development area present soil conditions that are complimentary to this sensitive natural community and one native needlegrass species was identified within the project site, nodding needlegrass (*Stipa cernua*). Therefore, some conditions within the project site may potentially meet the classification criteria for this sensitive natural community.

OAK WOODLAND

Blue oak woodlands/forest are scattered throughout much of the eastern portion of the solar development area and project site, but primarily along the northern and southern portions of Coyote Creek, in the southwest near the confluence of Coyote and Carson creeks, and all along the eastern edge of the project site. Native oak woodlands with greater than 10 percent canopy cover are considered sensitive in the State of California. Conversion of oak woodlands that may have a significant effect on the environment are subject to mitigation requirements as set forth in the California Oak Woodlands Conservation Act and in the Sacramento County General Plan (See Regulatory Setting Section below). A detailed description of oak woodland/forest within the solar development area and project site is provided in Appendix BR-1.

DESIGNATED CRITICAL HABITAT/ESSENTIAL FISH HABITAT

No designated critical habitat or essential fish habitat overlaps the solar development area or the project site. The nearest mapped designated critical habitat (for Central Valley steelhead) is approximately four miles northwest of the project site (Plate BR-2), along the American River. Designated critical habitat for Sacramento Orcutt grass also occurs approximately 4.8 miles northwest, and for Sacramento Orcutt grass and slender Orcutt occurs approximately six miles west of the project site (Plate BR-2). Additional designated critical habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp occurs approximately five miles west of the project site (Plate BR-2). Additional details regarding essential fish habitat and designated critical habitat are provided in Appendix BR-1.

MATHER CORE RECOVERY AREA

The USFWS established the Mather Core Recovery Area in the 2005 Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (Recovery Plan) (USFWS 2005). According to USFWS, the “core areas are the specific sites that are necessary to recover these endangered or threatened species or to conserve the species of concern addressed in this recovery plan” (USFWS 2005). While not legally mandated for protection outside of areas of designated critical habitat, core areas are the focus of recovery efforts. General recovery criteria identified for the Mather Core Recovery Area in the Recovery Plan are to protect 85 to 95 percent of suitable habitat for vernal pool branchiopods and 95 to 100 percent of Orcutt grass occurrences.

Approximately 568 acres of the project site, including 289 acres within the solar development area, are within the Mather Core Recovery Area (Plate BR-2).

WILDLIFE CORRIDORS AND HABITAT LINKAGES

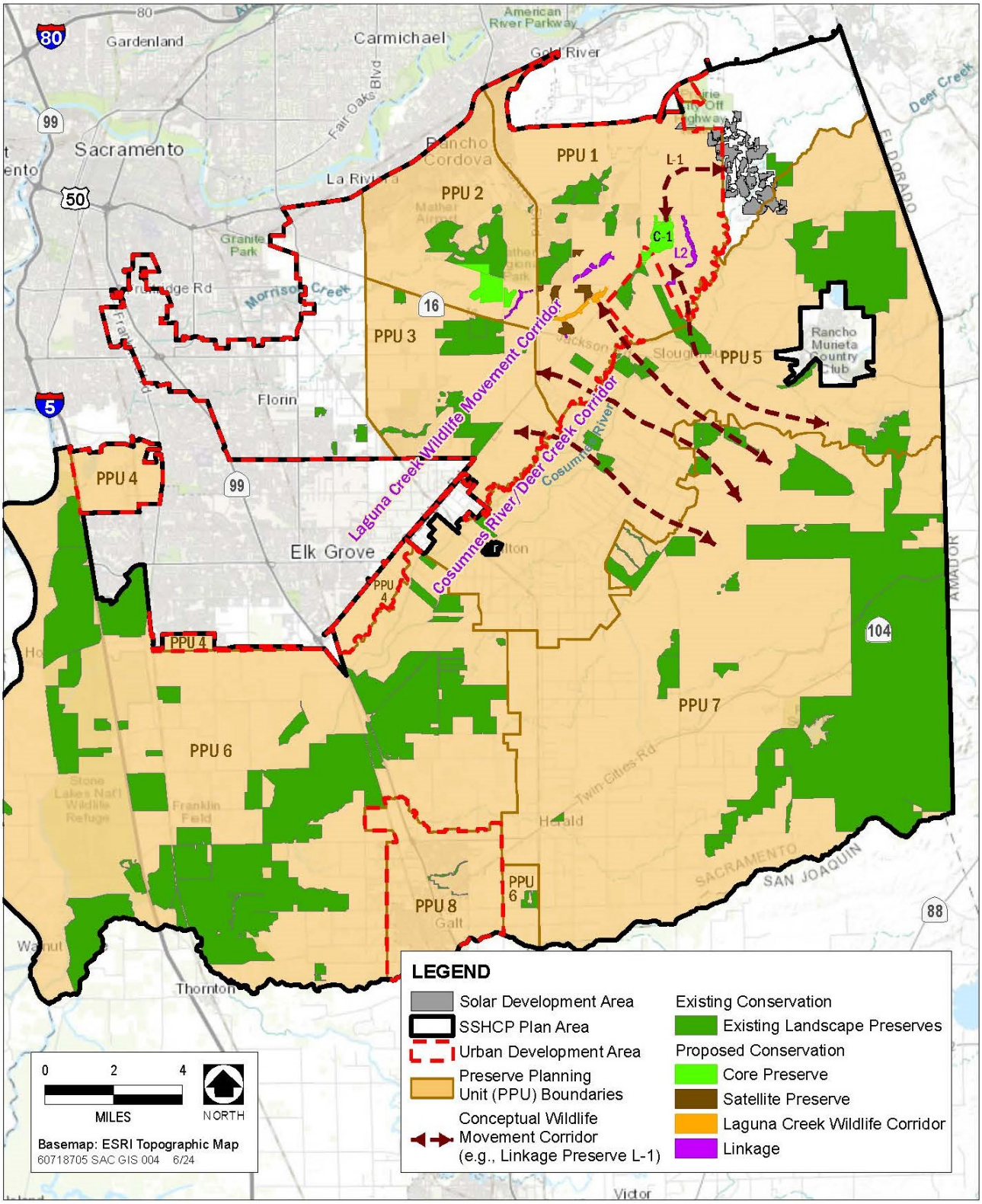
Wildlife movement corridors have been recognized by federal and state agencies as important habitats worthy of conservation. Wildlife corridors provide migration channels seasonally (i.e., between winter and summer habitats) and provide non-migrant wildlife the opportunity to move within their home range for food, cover, reproduction, and refuge.

According to the California Essential Habitat Connectivity Project, the Coyote Creek corridor and generally remaining riparian corridors such as along Carson Creek which cross the solar development area are considered essential habitat connections, providing native habitat for resident wildlife and linkages between native habitat in the surrounding area (Spencer et al. 2010) Due to high levels of natural land conversion and fragmentation, these remaining riparian corridors play a critical role in supporting cross valley connectivity and helping to connect remaining natural areas in the Central Valley. The California Essential Habitat Connectivity Project also identifies much of the grasslands within the project site as “Natural Areas Small,” which are areas important to maintaining ecological integrity at local and regional scales, but not included in the Essential Habitat Connectivity network at the state-wide scale.

The SSCHP identifies the Carson Creek linkage (i.e., Linkage Preserve L-1) as a targeted linear preserve within Preserve Planning Unit 1 (PPU 1) intended to connect a proposed core preserve area southwest of the project site near Glory Lane (i.e., referred to as Core Preserve C-1 in the SSHCP) to undeveloped areas to the east that are outside of the Sacramento County UDA, where Carson Creek occurs within the project site. The SSHCP anticipated that the Carson Creek linkage area (L-1) will be bordered by urban development with full buildout of the UDA; therefore, the Carson Creek linkage corridor is anticipated to be important for maintaining habitat connectivity to areas outside the UDA in the future buildout scenario. A map of the SSHCP planning areas, including the PPUs, existing preserves, and conceptual wildlife movement corridors in relation to the solar development area is included as Plate BR-3.

Furthermore, the valley grasslands on site provide nursery and migratory habitat for common wildlife species. Existing fencing on the project site is designed primarily to manage on-site cattle operations and provide visibility to wildlife. Existing fencing is approximately four to five feet high and is constructed of single barbed wire, woven wire, or high-tensile wire, which likely retains some wildlife permeability across the site.

Plate BR-3: SSHCP Planning Areas



Source: Sacramento County 2022; Adapted by AECOM 2024

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 United States 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. Under Sections 7 and 10 of the federal ESA, USFWS may issue a permit for the take of threatened or endangered species if such taking is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity," and is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat for any such species.

The federal ESA also requires designation of critical habitat (habitat essential to the conservation of the species) and development and implementation of recovery plans for the conservation and survival of listed species. As such, the federally listed species addressed in this document have designated critical habitat subject to "take" restrictions identified above. Furthermore, the proposed project should maintain consistency with the stated recovery objectives included in all relevant species recovery plans.

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

The Clean Water Act (CWA) is the major federal legislation governing water quality, providing guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 404 of the 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 United States, including wetlands. Section 401 of the CWA requires an applicant applying for a Section 404 permit that may result in a discharge of pollutants into waters of the U.S. to obtain Section 401 water quality certification (or certification waiver), thereby ensuring that the discharge will comply with provisions of the CWA. The State Water Resources Control Board and Regional Water Quality Control Boards (RWQCBs) administer the 401 certification program in California. Section 402 of the CWA establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S.

The definition of waters of the U.S. establishes the geographic scope for authority under Section 404 of the CWA; however, the CWA does not specifically define "Waters of the United States," leaving the definition open to statutory interpretation and agency rulemaking. The definition of what constitutes "Waters of the United States" (provided in 33 CFR Section 328.3[a]) has changed multiple times over the past few decades starting with the *United States v. Riverside Bayview Homes, Inc.* court ruling in 1985. Subsequent court proceedings, rule makings, and congressional acts in 2001 (*Solid Waste Agency of Northern Cook County v. United States Army*

Corps of Engineers), 2006 (*Rapanos v. United States*), 2015 (Clean Water Rule), 2018 (suspension of the Clean Water Rule), 2019 (formal repeal of the Clean Water Rule), 2020 (Navigable Waters Protection Rule), and 2021 (*Pasqua Tribe et al v. United States Environmental Protection Agency* resulting in remand and vacatur of the Navigable Waters Protection Rule and a return to "the pre-2015 regulatory regime") have attempted to provide greater clarity to the term and its regulatory implementation. A Revised Definition of "Waters of the United States" rule (Rule) (88 CFR 3004–3144) became effective on March 20, 2023, restoring federal jurisdiction over waters that were protected prior to 2015 under the CWA for traditional navigable waters, the territorial seas, interstate waters, and upstream water resources that significantly affect those waters. The Rule represented a re-expansion of federal jurisdiction over certain water bodies and wetlands previously exempt pursuant to the 2020 Navigable Waters Protection Rule. The Rule also considered various subsequent court decisions including two notable Supreme Court decisions. However, the applicability of the Rule was substantially affected by a subsequent May 2023 Supreme Court ruling, which reinstated the "Significant Nexus" test and adopted the "Relatively Permanent Standard" test. On May 25, 2023, in *Sackett v. USEPA,* the Supreme Court issued an opinion in a case concerning the applicability of the term "Waters of the United States" in the CWA to wetlands adjacent to other waters. The USACE and the U.S. Environmental Protection Agency have published the Final Rule on August 29, 2023, to address the Sackett decision.

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 (including birds of prey) listed in Title 50, Section 10.13 of the CFR, 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" (see 50 CFR 10.12 and 22.6) 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.

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 EIR if there is substantial evidence that the project may have a significant effect on the environment. Where an EIR 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 EIR" (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.

CESA prohibits the take of state-listed threatened or endangered animals and plants unless otherwise permitted pursuant to CESA. "Take" under CESA is defined as any of the following: "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (CFGC Section 86).

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.

As detailed above in "Clean Water Act, 33 U.S.C. Section 1251 et seq" above, Section 401, the Porter-Cologne Act, CFGC Sections 1601-1607, delegates responsibility to the SWRCB for water rights and water quality protection and directs the nine statewide RWQCBs to develop and enforce water quality standards within their jurisdiction.

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. All bat species occurring naturally in California are considered non-game mammals and are therefore prohibited from take as stated in CFGC Section 4150.

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. If potential impacts are identified that could result from a project activity, then consultation with CDFW, permitting, and/or other mitigation may be required. As such, 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.

California Oak Woodlands Conservation Act and Oak Protection

The 2005 CFGC Sections 1360–1372 outline the terms and conditions comprising the California Oak Woodlands Conservation Act (OWCA). The OWCA mandates counties to require feasible and proportional habitat mitigation for impacts on oak woodlands as part of the CEQA review process. An oak woodland is defined as an oak stand with greater than 10 percent canopy cover comprised of native oak (*Quercus* spp.) trees with a diameter at breast height (DBH) greater than 5 inches, or an oak stand that may have historically supported greater than 10 percent canopy cover. The OWCA encourages and defers to local jurisdictions to develop and implement oak conservations plans developed under the OWCA (WCB 2021).

Under Section 21083.4 of the Public Resources Code, each county is required to determine whether a project under its jurisdiction “may result in a conversion of oak woodlands that will have a significant effect on the environment.” The law applies to all oak woodlands, except those dominated by black oak (*Quercus kelloggii*). Mitigation is required for any project that may have a significant effect on oak woodland and may be selected from several mitigation

alternatives set forth in Public Resources Code Section 21083.4(b). However, only up to 50 percent of the required mitigation may be satisfied by planting of oaks.

Other State Tree Protection Regulations

Additional State laws that regulate and/or protect oaks and oak woodlands include the Professional Foresters Law, CEQA, and adopted regulations of the Board of Forestry and Fire Protection. The Professional Foresters Law addresses oak habitat evaluations. Both the Professional Foresters Law and CEQA apply to all local jurisdictions.

Local

Sacramento County General Plan

The Sacramento County General Plan, with a planning horizon of 2030, 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 policies (most recently amended in 2017) pertaining to biological and aquatic resources in Sacramento County that are most relevant to the proposed project.

Vegetation and Wildlife: Habitat Protection and Management

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

Policy 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.

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

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

Policy CO-62. Permanently protect land required as mitigation.

Policy 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.

Aquatic Resources: Rivers and Streams

Policy CO-87. Encourage private landowners to protect, enhance and restore riparian habitat.

Policy CO-89. Protect, enhance, and maintain riparian habitat in Sacramento County.

Policy CO-91. Discourage introductions of invasive non-native aquatic plants and animals.

Policy CO-92. Enhance and protect shaded riverine aquatic habitat along rivers and streams.

Policy CO-115. Provide setbacks along stream corridors and stream channels to protect riparian habitat functions.

(1) A functional setback of at least 100 feet and measured from the outside edge of the stream bank should be retained on each side of a stream corridor that prohibits development or agricultural activity. This buffer is necessary to protect riparian functions by allowing for the filtering of sediment, pesticides, phosphorus and nitrogen, organic matter and other contaminates that are known to degrade water quality. This buffer also provides for the protection of vegetation along the stream bank which provides bank stability, erosion control and flood attenuation;

(2) A transitional setback of at least 50 feet in width beyond the functional buffer should be retained along all stream corridors. This buffer is necessary to protect hydrogeomorphic functions that regulate water temperature, regulate microclimate, maintain channel complexity, and retain hydrologic flow regimes. This buffer also provides corridors to facilitate the movement of wildlife.

TERRESTRIAL RESOURCES

Policy CO-138. Protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk (SWHA), 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.

Policy 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.

Policy CO-140. For projects involving native oak woodlands, oak savannah, or mixed riparian areas, ensure mitigation through either of the following methods:

(1) An adopted habitat conservation plan;

(2) Ensure no net loss of canopy area through a combination of the following: A- preserving the main, central portions of consolidated and isolated groves constituting the existing canopy and B- provide an area on site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration;

(3) Removal of native oaks shall be compensated with native oak species with a minimum of a one-to-one DBH replacement;

(4) A provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion

of the Sacramento County Tree Coordinator when removal of a mature oak tree is necessary;

(5) If the project site is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated may be paid to Sacramento County's Tree Preservation Fund or another appropriate tree preservation fund; and

(6) If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. Such a mitigation area must meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity. Protected woodland habitat could be used as a suitable site for replacement tree plantings required by ordinances or other mitigations.

(a) Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed;

(b) Adjacent to protected stream corridor or other preserved natural areas;

(c) Supports a significant number of native broadleaf trees; and

(d) Offers good potential for continued regeneration of an integrated woodland community.

Policy CO-141. In 15 years, the native oak canopy within on-site mitigation areas shall be 50% canopy coverage for valley oak and 30% canopy coverage for blue oak and other native oaks.

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 (suitable areas within 10 miles of a Swainson's hawk nest) 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 an 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.

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 certain types of planned development, infrastructure, and maintenance activities. The SSHCP does not apply to the project. 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. Solar development, such as for the proposed project, is not a covered activity under the SSHCP. 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 majority of the solar development area (1,252 acres) is located outside of the UDA and solar development is not a covered activity under the SSHCP. Therefore, the project would not be subject to receive take coverage under the SSHCP and 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. The project site is mostly located outside of PPUs, but a small portion (approximately 148 acres) in the southeastern portion of the solar development area overlaps PPU 5 and a few portions (approximately 159 acres) of the western portion of the solar development area overlaps PPU 1 (Plate BR-3). 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. PPU 5 is located outside the UDA. 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, all of which occur outside the project site and solar development area. PPU 1 is located primarily within the UDA. The dominant land cover in PPU 1 is also grassland, but PPU 1 is also very important for vernal pool species; it contains the greatest amount of vernal pool and swale habitat of any PPU within the UDA, some of which overlaps the project site and solar development area. PPU 1 encompasses 19,729 acres; approximately 1,158 acres of which are in high density development, 1,180 acres of which are in existing preserves (within and outside the UDA) and approximately 3,756 acres are proposed for SSHCP preserves primarily within the UDA. PPU 1 also contains 15,827 acres of the 24,245-acre Mather Core Recovery Area, identified in the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005).

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 long-term 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 solar development area, 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 by assessing the consistency with local policies and ordinances including the SSHCP Conservation Strategy.

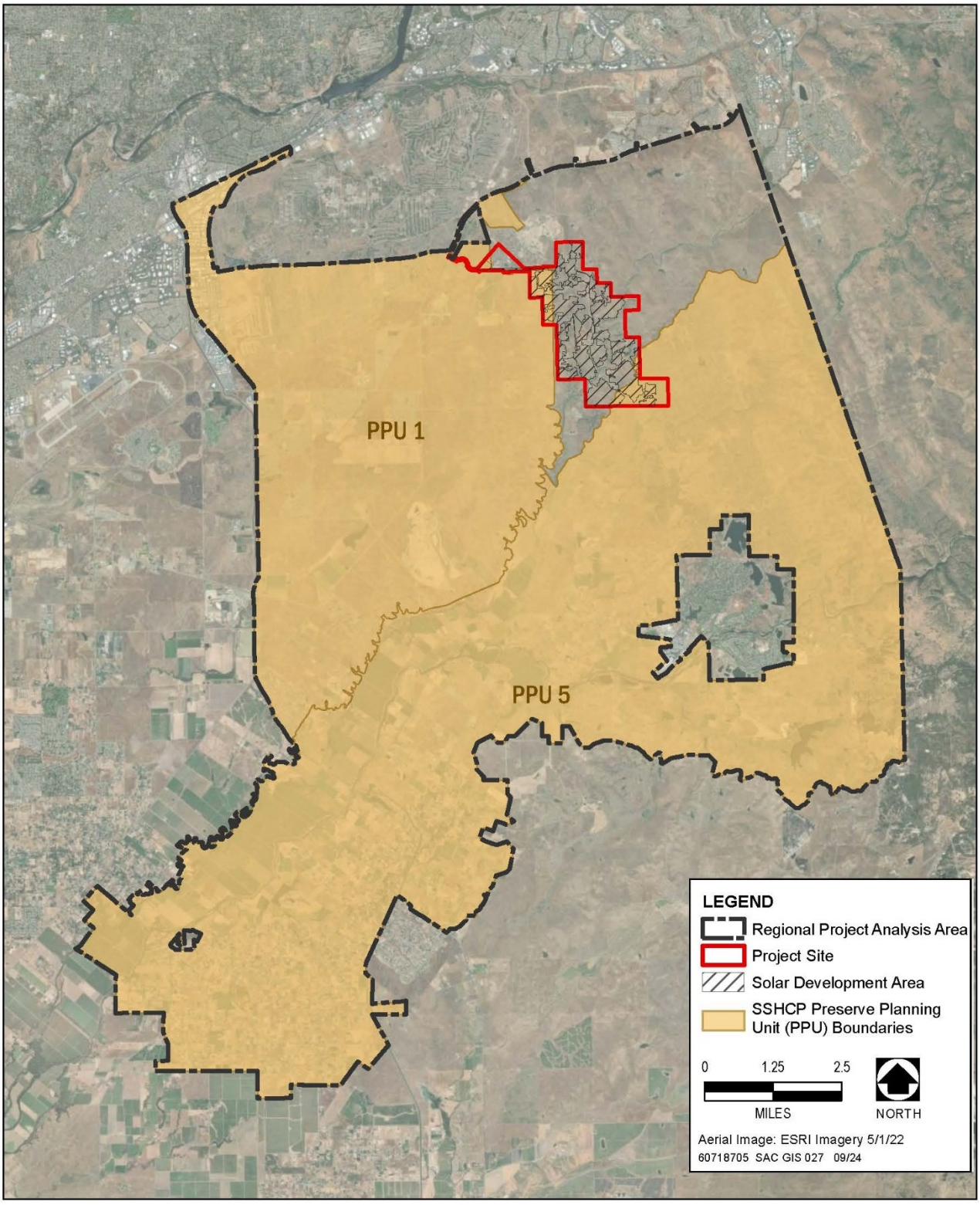
A detailed analysis of project impacts and impact determinations are provided in the following sections. For species and resources for which modeled suitable habitat data are available from the SSHCP, a “regional project analysis area” consisting of the northeastern portion of the SSHCP Plan Area (i.e., PPUs 1 and 5 and the portion of the SHCP Plan Area in between) was

used to evaluate the impact context for biological resources (Plate BR-4). This regional project analysis area was selected because PPUs were delineated, in part, to be spatially representative of regional biological resources, with each PPU capturing specific habitats and areas of importance for a suite of species characteristic of that portion of the SSHCP Plan Area (County of Sacramento et al. 2018), and because relevant biological resources data are readily available for these areas. Impacts below are discussed both in terms of project site-specific impact acreages and also within the context of the "regional project analysis area" to reflect impacts to biological resources in the region.

PROJECT IMPACTS AND MITIGATION MEASURES

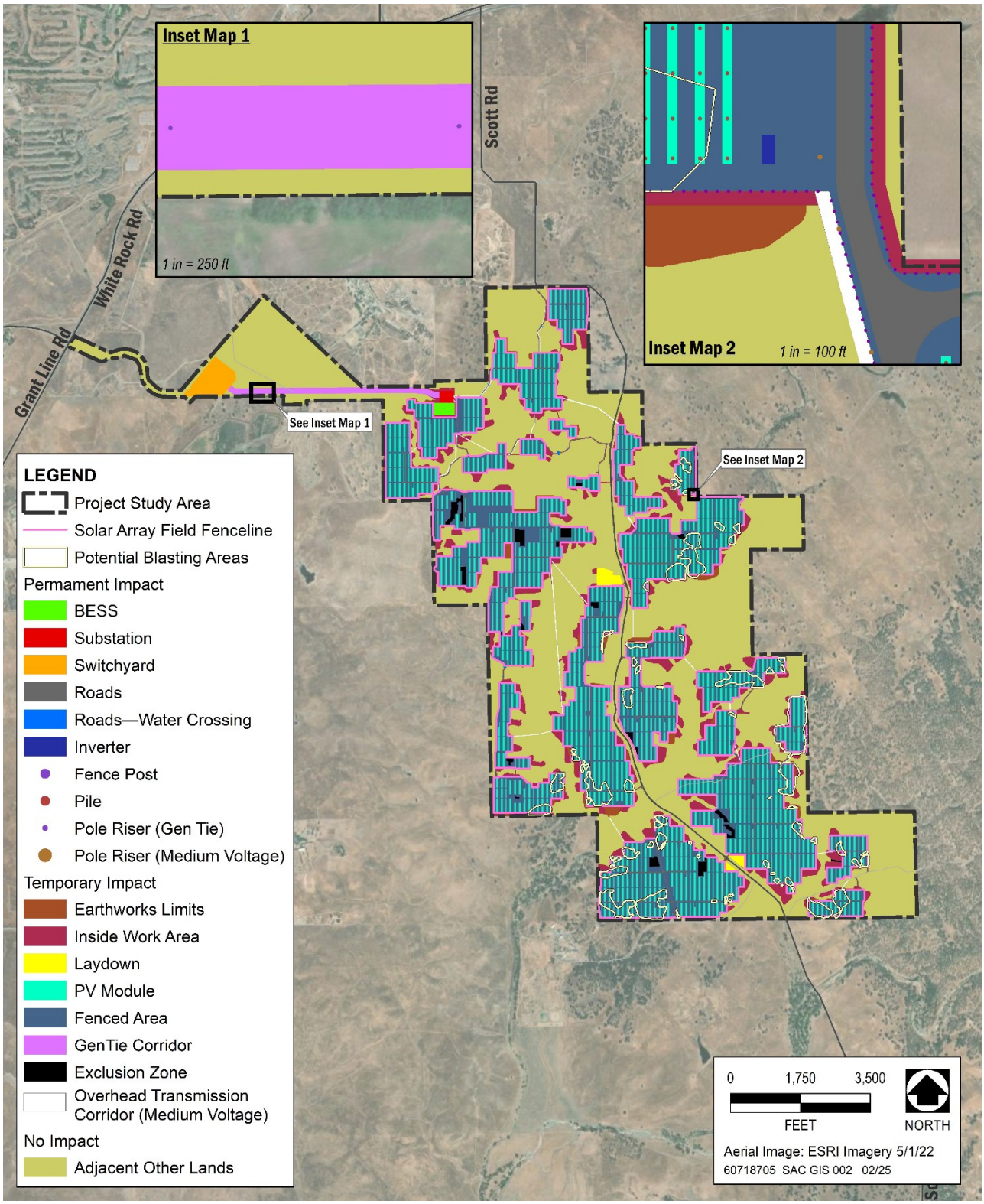
Plate BR-5 identifies the permanent and temporary impact footprint (i.e., direct impacts) for the proposed project as it relates to individual project components (e.g., BESS, substation, roads, etc.). Table BR-6 summarizes temporary and permanent impacts to vegetation communities and land cover types from the proposed project, according to the impact categories displayed on Plate BR-5. However, one exception is that permanent impacts have been assigned to all project components where they overlap vegetation communities characterized by a tree canopy layer (i.e., blue oak woodland, blue oak woodland [forest], and riparian woodland/forest) because all trees are proposed for removal from the entire solar development area. Plate BR-5 and Table BR-5 provide the basis, in part, for the impact analyses present in the sections that follow.

Plate BR-4: Regional Project Analysis Area



Source: Dudek 2024

Plate BR-5: Proposed Project Impact Footprint



Source: Dudek 2024

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

Vegetation Community/Land Cover Type[1]	Permanent Impact (Acres)[2]	Temporary Impact (Acres)[3]
Upland Cover Types		
Blue oak woodland (forest)	101.00	0
Blue oak woodland	186.28	0
Riparian woodland/forest	4.19	0
Valley and foothill grassland	52.94	1,035.49
Urban/Developed	0.90	20.20
Subtotal—Upland Cover Types	***345.31***	***1,055.69***
Aquatic Cover Types		
Ditch	0	0.02
Ephemeral channel	0.12	5.97
Intermittent channel	0.12	0.26
Perennial channel	0.10	0.28
Upland swale	0.01	2.07
Freshwater emergent wetland	0	0
Fringe wetland	0	0.01
Pond	0	0.01
Seasonal wetland	0	0.16
Seasonal wetland swale	0.05	1.32
Seep	0	0.01
Vernal pool	<0.01	0.17
Vernal swale	0.02	0.03
Subtotal—Aquatic Cover Types	***0.42***	***10.30***
Total	**345.73**	**1,066.00**

Sources: Dudek 2024; compiled by AECOM 2023

Notes:

[1] Upland vegetation communities and landcover types are based on the Holand classification system (Holland 1986). Aquatic cover types are based on the aquatic resources delineation completed by Dudek (Appendix BR-1) and the Cowardin classification system (USFWS 2013).

[2] Permanent impacts on vegetation communities/land covers were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads, fence posts, inverters, solar panel piles, and poles supporting electrical infrastructure. Permanent impacts were additionally assessed on all vegetation communities with trees (i.e., blue oak woodland, blue oak woodland (forest), riparian woodland/forest) from the following project components, because trees would be permanently removed from all of these areas: earthwork limits, inside work area, fenced area, photovoltaic (PV) module, gen-tie corridor, overhead transmission corridor (medium voltage).

[3] Temporary impacts on vegetation communities/land covers without trees were assessed for the following project components: earthwork limits, inside work areas, laydown areas, PV modules, fenced area, gen-tie corridor, overhead medium voltage transmission line corridor, and exclusion zones.

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 grading and potential blasting) 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, vibration, visual or physical disturbances, and fugitive dust generated during ground-disturbing 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 solar development area. 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. The operation of PV solar fields could result in "lake-effect" injury or mortality to birds and bats, as described further below (see also sections "Other Nesting Raptors and Migratory Birds," and "Native Bats"). 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 and woodland associated species. Depending on the level of restoration achievable on-site, wetland-associated species may also benefit from decommissioning. Additional detail about effects from potential blasting and the "lake effect" are provided in the paragraphs that follow.

Blasting may be required during site preparation (i.e., grading) and trenching in areas underlain by granitic materials in order to establish foundations and final graded elevation (see Chapter 2, "Project Description", and Chapter 12, "Noise"). Potential blasting areas are identified on Plate BR-5 and total approximately 106 acres within the 1,412-acre solar development area. Construction of the project would include up to one blasting event per day, for a total of 35 blasting events. Each proposed blasting event would be no more than approximately 8 tons of charge detonated in multiple instantaneous blasts of no more than 2.8 kg charges spread out over a maximum 30-minute duration in total on any given day. As identified in Chapter 12 (Noise), blasting is anticipated to generate the second highest noise and vibration levels of all proposed project-related construction activities. During blasting, noise and vibration levels are anticipated to be 98.1 decibels (dB) Equivalent Noise Level (L_{eq}) at 150 feet (See Table NOI-14) and 0.999 inches per second (in/sec) peak particle velocity (PPV), or 108 vibration decibels (VdB), at 149 feet (Dudek 2024), respectively, without implementation of standard best management practices that are typically implemented to reduce resultant noise and vibrations (and that are required by mitigation identified in Chapter 12 of this EIR). Each blasting event would displace between 10,000 and 12,000 cubic yards of soil, with an average depth of 12 feet.

For the purposes of analysis in this EIR, potential blasting areas are considered a temporary impact, except where they overlap areas identified as permanent impacts (see Plate BR-5).

Noise and vibrations associated with blasting activities have potential to negatively affect wildlife, including nesting birds and burrowing mammals. Blasting noise and vibrations may temporarily displace individuals from adjacent suitable habitats; cause abandonment of nests, eggs, or young; affect communication between individuals in a way that could increase vulnerability to predation, reduce foraging efficiency or breeding success; or cause general increases in stress levels. The physical displacement of soil and rock during blasting could also cause direct injury/mortality of wildlife as a result of being stricken by blast debris or by being entombed in burrows that collapse as a result of vibrations from blasting, but see further discussion below with regard to best management practices typically implemented during blasting (and required by mitigation detailed in Chapter 12 of this EIR, “Noise”) that would avoid and minimize potential for these impacts.

Both noise and vibration diminish in magnitude with increases in distance from the source. Noise levels diminish by approximately 6 dB per doubling of distance from the source; vibration levels diminish by approximately 35.4 percent per doubling of distance from the source. Both noise and vibration attenuation can be affected by other environmental factors, such as weather and soil type, but generalized attenuation rates presented above and identified in Tables NOI-14 (for noise) and Table BR-6 (for vibration), below, have been assumed to be representative for the project site.

Table BR-6: Attenuation of Blasting Vibration Levels with Distance.

Distance from Blasting Source (Feet)	Anticipated Vibration Level (VdB)	Anticipated Vibration Level (PPV in in/sec)
149	108	0.999
160	107	0.9
173	106	0.8
189	105	0.7
209	104	0.6
236	102	0.5
274	100	0.4
435	94	0.2
691	88	0.1

Note:

in/sec = inches per second

PPV = peak particle velocity

As identified in Chapter 12, ambient noise levels measured at the project site ranged from 40 to 68 A-weighted decibels (dBA) (see Table NOI-4); and a typical background vibration-velocity level in residential areas is approximately 50 VdB (0.0013 in/sec PPV). Potential impacts on wildlife from blasting noise and vibrations may occur up to the distance where disturbance levels attenuate to ambient levels. However, substantial adverse noise effects may reasonably be expected to be limited to distances up to where noise levels drop to 50-60 dBA, an identified conservative multiple-impulse noise impact threshold (such as for jackhammer or pile driving

activities) that has been previously identified for birds (Caltrans 2016) and may be reasonably assumed to be a substantial impact threshold for birds and other wildlife in relation to project-proposed blasting, where short-term multiple-impulse blasts may occur for up to 30-minutes in duration in a given day. Based on noise attenuation modeling, unmitigated blasting-generated noise (i.e., without implementation of standard blasting best management practices) would attenuate to 60 dBA at approximately 2.3 miles (~ 12,000 feet) from the blasting source. With implementation of standard best management practices such as blast mats and temporary noise barriers which can conservatively reduce noise levels by 20 dBA (See Chapter 12, "Noise"), noise levels could be reduced to approximately 55 dBA at 0.5 mile. Most wildlife known or with potential to occur on-site are mobile and could move away from high noise areas for the relatively short duration of this potential impact (up to 35 days of blasting impacts in total, spread out across the project site); furthermore, for wildlife that would be expected to remain in burrows during blasting events, noise impacts would be expected to be buffered in their underground burrows. However, nesting birds and communally roosting bats may be subject to significant negative impacts within approximately 0.5 mile of proposed blasting areas with implementation of noise mitigation measures.

In regard to potential impacts from vibrations, a case study that evaluated blasting- and traffic-induced vibrations on the stability of artificially created desert tortoise and San Bernardino kangaroo rat burrows found that vibrations up to as high as 0.4 in/sec PPV (equivalent to approximately 99 VdB) did not cause burrow collapse (Barneich et al 2004). Furthermore, a conservative engineering assessment of the structural integrity of Hawaiian petral burrows in Maui, Hawaii determined that burrows would be expected to sustain vibrational forces associated with up to 0.12 in/sec PPV without collapse; these same burrows sustained a 6.8 magnitude earthquake (measured at 3.4 in/sec PPV) in the immediate proximity and did not collapse (USFWS 2007). Using values from these studies as a guideline for impact thresholds and based on vibration attenuation modeling identified in Table BR-6, blasting-generated vibrations from the project would be expected to attenuate to 0.4 in/sec within 100 feet from the blasting source. Therefore, special-status species present in burrows within 100 feet from the blasting source could be subject to potentially significant impacts from vibrations.

Ongoing impacts on wildlife during project operation could also result from increased human presence and activities in the area, including visual and noise disturbances, as well as direct impacts related to collisions with solar arrays, including the "lake effect" (Kagan et al. 2014) or collisions/electrocutions associated with electrical infrastructure (Huso et al. 2016).

The "lake effect" refers to the potential direct impacts on wildlife in which wildlife (e.g., birds and bats) might collide with or become stranded within photovoltaic (PV) panels because of the water-like reflective surface created by the aggregation of closely spaced PV panels onto which they are attracted or otherwise attempt to land (Kagan et al. 2014). Horvath et al. (2009) first introduced the concept as polarized light pollution, in which artificial surfaces such as asphalt, glass, and PV solar panels reflect highly and horizontally polarized light. Because many animal taxa are known to perceive polarized light and to use polarized light as environmental cues, and because highly and horizontally polarized light is very attractive to some animal groups (e.g., insects), Horvath et al. (2009) identified the potential for ecological traps from artificial sources of polarized light in particular surfaces that reflect supernormal polarization signatures. While potential exists for "lake-effect" related impacts, some recent studies on the impact of utility-scale solar development on birds and bats in the United Kingdom (Harrison et al. 2017) and in California (Diehl et al. 2024) suggest that collision risk of PV solar facilities to birds and bats may

depend on the habitat and landscape context (arid regions may experience higher mortality) and taxonomic group, such as higher risk to water-obligate species in arid environments and warblers; and overall may be relatively low when compared to other forms of solar energy facilities (concentrated solar power) and wind energy facilities. Plate BR-5 shows the project site plan and identifies the project components as they relate to the temporary and permanent construction disturbance footprint for the proposed project. 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 per implementation of the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources").

Details regarding species-specific impacts are described in the species-specific subsections included below. Collectively, 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) shall be implemented during construction and decommissioning of the project. The following AMMs were developed, in part, based on a review of *SSCHP General Avoidance and Minimization Measures, Condition 3 – Implement Construction Best Management Practices* and *General Covered Species Take Avoidance and Minimization Measures for applicability to the Project*.

Mitigation Measures

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

- ***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.*
- ***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 known or potential habitat for western pond turtle 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.*
- ***Equipment Storage and Fueling.*** *During construction activities, equipment storage and staging shall occur only in designated areas of the development footprint. Fuel storage and equipment fueling shall occur a minimum of 100 feet away from waterways, stream channels, stream banks, and other environmentally sensitive areas (e.g., known rare*

plant occurrences) 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.

- ***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.*

- ***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.*

- ***Construction Lighting.*** *All temporary construction lighting (e.g., lighting used for security or occasional nighttime equipment maintenance or other limited scope of work such as to avoid extreme heat) shall be directed away from adjacent natural habitats, and particularly riparian and wetland habitats and wildlife movement areas.*

- ***Biological Monitor.*** *A qualified biological monitor shall be on-site during construction activities as needed, as described below in Mitigation Measure BR-1b (Special Status Plants), Mitigation Measure BR-1c (Western Spadefoot), Mitigation Measure BR-1d (Western Pond Turtle), Mitigation Measure BR-1f (Swainson's Hawk), Mitigation Measure BR-1g (Tricolored Blackbird), Mitigation Measure BR-1h (Valley Elderberry Longhorn Beetle)), Mitigation Measure BR-1l (Nesting Raptors and Migratory Birds), and Mitigation Measure BR-1m (Crotch's Bumble Bee).*

- ***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 special-status 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 special-status 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.*

- ***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.*

- ***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. Non-native plants identified as a State listed noxious weed or as a California Department of Food and Agriculture rated A through C invasive plant are prohibited.*

- ***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.*

- ***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 workday, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place.*

- ***No Pets in Construction Areas****. To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a project site.*

- ***Minimize Effects from Temporary Channel Re-Routing.*** *If necessary to temporarily re-route a stream, creek, or drainage in order to conduct project work activities (i.e., conducting work when the channel is naturally dry is not feasible), the re-routing will be completed in a manner that minimizes impacts to beneficial uses and habitat. The following measures will be employed to minimize disturbances that will adversely impact water quality:*

  - *No equipment will be operated in areas of flowing or standing water.*

  - *Construction materials and heavy equipment must be stored outside of the active flow of any waters.*

- ***Design for Stream Channel Alterations.*** *Local, native materials will be used as fill material to the extent practicable.*

- ***Prevent Invasive Species Spread.*** *Construction- and operations-related activities shall be conducted in a manner that avoids the spread of invasive species. Such prevention measures shall include the following:*

  - *Before bringing any equipment onto the project site, equipment must be cleaned of mud, dirt, and plant material. Cleaning shall occur in the infested area, or another appropriate off-site location as approved by Sacramento County.*

  - *Ground-disturbing activities shall start in un-infested areas and move to infested areas to the maximum extent feasible. Where work must occur in infested areas, equipment must be cleaned of any mud, dirt, and plant material before moving into un-infested areas; or the project proponent shall apply an appropriate manual, mechanical, or chemical (if authorized) treatment in accordance with County and State regulations prior to working in infested areas.*

  - *Invasive plant prevention techniques shall be incorporated into operations and maintenance plans.*

  - *A qualified biologist shall be retained to conduct an annual weed survey in spring for five years following construction along all road shoulders, ditches and other linear aquatic features, and the fence line within portions of the project site disturbed during construction for invasive weeds or other exotic plant species. Where new weed infestations (relative to pre-project conditions) have been identified or where known prior noxious weed infestations appear to have expanded as a result of project developments, the project proponent shall apply an appropriate manual, mechanical, or chemical (if authorized) treatment in accordance with County and State regulations.*

- ***Blasting Plan.*** *Implement Mitigation Measure NOI-1b, Prepare and Implement a Blasting Plan, which includes optimizing blast design parameters (e.g., charge size, delay intervals, etc.) and using blast mats to cover the blast area to reduce noise levels; and implement noise monitoring to determine if additional real-time sound attenuating measures, as specified, are necessary. In addition to requirements in NOI-1b, which are intended to ensure compliance with noise related regulations, additional sound attenuating measures, as described in NOI-1b, may be needed to reduce potential noise- and vibration- related impacts to special-status species, as identified in the species-specific mitigation measures subsections provided below.*

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

Special-Status Plant Species

Database searches revealed no special-status plant occurrences previously documented within the solar development area; the nearest previously documented rare plant occurrence is approximately 1.3 miles southwest of the project site (Sacramento Orcutt grass). However, four rare plants were observed during project surveys in 2023 and 2024 within and near the solar development area that could be affected by project activities: spiked western rosinweed (*Calycadenia spicata*) (within and adjacent to the solar development area), and Ahart's dwarf rush and pincushion navarretia (adjacent to the solar development area), as further described next. More than 500 individuals of spicate calycadenia (CRPR 1B.3, annual) were detected in 31 separately mapped occurrences throughout the western half of the solar development area and in adjacent areas west of the project site in 2023; populations were reportedly widespread and variable within these areas (Appendix BR-1, Biological Technical Report). Ahart's dwarf rush (CRPR 1B.2, annual) and pincushion navarretia (CRPR 1B.1, annual) were also detected in a few locations outside of, but adjacent to, the solar development area. Two individuals of Ahart's dwarf rush were observed approximately 35 feet west of the proposed switchyard in association with a vernal pool. Over 2,000 pincushion navarretia plants were observed in three general locations outside of, but adjacent to, the solar development area: (1) approximately 70 feet west of the proposed switchyard, in association with a vernal pool; (2) approximately 60 to 375 feet west of solar array fields along the western boundary of the solar development area, in association with vernal pools, seasonal wetlands and an ephemeral drainage; and (3) approximately 100 feet east of solar array fields in the southwest portion of the site, in association with a vernal pool. While rainfall was considered low during 2021, 2022 delivered slightly above average precipitation for the region, and 2023 and 2024 were considered exceptionally wet. Therefore, rare plant surveys conducted in 2022, 2023 and 2024 were considered sufficient to expect germination and detection of potential special-status species considered in this document.

A total of 18 separately mapped occurrences of spiked western rosinweed within the western portions of the solar development area could be directly impacted by the project during construction activities associated with the solar array fields, which represents approximately 58 percent of the 31 occurrences within the project site. Because this is an annual species for which the population numbers fluctuate in any given year, the actual direct impact to individuals may differ at the time of project construction; however, because the potential impact is based on survey results from an extremely wet survey year (2023), it is likely to be representative of the maximum potential impact to this species. Direct impacts on spiked western rosinweed could occur during site preparation/grading, driving of support piles for solar panels, trenching of underground collection lines and overland travel of vehicles and equipment through suitable habitats; and could include removal/unearthing of or crushing individuals, smothering individuals under stockpiled material, and temporary disturbance/degradation to occupied habitat (e.g., soil compaction). Such activities could cause a reduction in the local seed bank if individuals are removed/destroyed prior to seed set. Because this species was only recently added to the CRPR list, as a 1B.3 ranked species, there are currently no records in the CNDDB. Calfora reports approximately 160 occurrences of this species in California, of which five are from Sacramento County and including one in the project site vicinity (east of Scott Road) from 2021 (Calflora 2024). While the project would impact approximately 58 percent of the local on-site population and approximately 11 percent of state-wide occurrences, occurrences in adjacent areas of the project site are likely to persist beyond construction. However, the entire range of this species is currently restricted to a narrow band along the eastern edge of the Central Valley and adjacent lower Sierra Nevada foothills from Butte County to Kern County (Stone et al. 2023). Degradation of adjacent special-status plant habitat for spicate calycadenia, Ahart's dwarf rush, and pincushion navarretia from inadvertent encroachment of project construction activities into adjacent occupied occurrences, fugitive dust, the introduction of invasive weeds, project-related stormwater runoff, spills of toxic materials, or changes in on-site hydrology or drainage patterns would not be expected because the project would implement construction best management practices (see Mitigation Measure BR-1a) and would be required to comply with laws, regulations, and ordinances (including permit terms) related to water quality (see Impact HYD-1 in Chapter 10, "Hydrology and Water Quality").

Implementation of grazing regimes or other vegetation management actions as part of the Agricultural Management Plan, if incompatible with the life cycle of spiked western rosinweed, could reduce the long-term persistence of this species on the site. Because the project would impact a majority (approximately 60 percent) of the on-site occurrences for spiked western rosinweed, representing approximately 11 percent of documented occurrences across its currently known range, this would be considered a potentially significant impact. The potential loss of any known special-status plant occurrence would be considered a **potentially significant** impact.

To reduce impacts to spiked western rosinweed, Ahart's dwarf rush, and pincushion navarretia 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.

- *Implement Mitigation Measure BR-1a, in particular the following: Construction Fencing, Erosion Control, Equipment Storage and Fueling, Erodible Materials, Dust Control, Construction Lighting, Biological Monitor, Training of Construction Staff, Soil Compaction, Revegetation and Prevent Invasive Species Spread.*
  - *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 under "Training of Construction Staff" Mitigation Measure BR-1a.*
- *For special-status plant occurrences identified during project surveys to be within 100 feet of the solar development area (i.e., spiked western rosinweed, Ahart's dwarf rush, and pincushion navarretia), install environmentally sensitive area (ESA) fencing to protect and avoid these occurrences from inadvertent encroachment from adjacent construction activities. ESA fencing and/or appropriate signage shall be installed at a minimum of 20 feet from the edge of special-status plant populations. The project shall avoid performing any construction-related activities within the ESA. For work that cannot be avoided in the ESA, a biological monitor shall be present when project construction-related activities occur.*
- *For special-status plant occurrences within the solar development area (i.e., spiked western rosinweed), install ESA fencing to protect and avoid all (i.e., complete avoidance) or portions of known occurrences from direct disturbances during construction (i.e., spatial avoidance) to the maximum extent feasible. ESA fencing shall be installed as described above. A biological monitor shall be present when project construction-related activities occur within the ESA.*
- *Where spatial avoidance during construction, as described above, does not avoid effects, implement temporal avoidance by scheduling work activities (e.g., overland travel, grading, etc.) within known occurrences of spiked western rosinweed to occur after the majority of plants within the occurrence have set seed for the year (i.e., typically in late summer/early fall), as determined by a qualified botanist. If ground-disturbing activities must be conducted within known occurrences of this species, the following shall also be required in addition to temporal avoidance:*
  - *salvage topsoil from occupied areas prior to ground-disturbances for reestablishment once construction is complete,*
  - *retain a qualified botanist to monitor during initial ground-disturbing activities within known occurrences of this species to ensure all required measures are being implemented, and*
  - *retain a qualified botanist to conduct periodic surveys throughout the operational life of the project (including the first year post-construction and approximately every five years on average thereafter, with the goal of targeting years with sufficient rainfall for successful germination of this species). The intent of monitoring during operations is to confirm the re-establishment and continued occupancy of spiked western rosinweed within each recorded occurrence where temporal avoidance is implemented and to ensure no net loss of occurrences of this species.*
- *Incorporate specific grazing/mowing regimes and other relevant management measures consistent with the long-term preservation of spiked western rosinweed occurrences on-*

site into the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources"), such as mowing after seed set, incorporating compatible grazing prescriptions, and installing permanent ESA signage near spiked western rosinweed occurrences within/adjacent to the solar development area to alert Operations and Management staff of the ESA and any associated operational restrictions.

- *Implement the Aquatic Resource Mitigation Plan, as required under Mitigation Measure BR-3, to protect adjacent wetlands/waters within 50 feet from the solar development area that support special-status plants from indirect impacts.*

SPECIAL-STATUS WILDLIFE SPECIES

WESTERN SPADEFOOT

Western spadefoot has not been documented in the solar development area and no recent records (within the past few decades) are documented within five miles. No western spadefoot or their larval masses were observed during focused larval and eye-shine surveys conducted in suitable aquatic habitat within the solar development area in 2022. Furthermore, no suitable burrows for this species were observed during upland burrow surveys conducted for this species concurrently with burrowing owl surveys in 2021. However, potentially suitable aquatic (e.g., vernal pools, seasonal wetlands, swales, and other aquatic features) and upland habitats for this species are present in the solar development area and the potential for this species to occur cannot be ruled out from one season of negative aquatic survey results. A fairly recent occurrence of this species (from 2018) was documented approximately six miles southwest of the project site (CDFW 2024e). While little is known about the movements and dispersal distances of this species, a recent study from southern California found that western spadefoot burrows were located on average within 225 feet from aquatic breeding pools (Baumberger et al. 2019).

Project implementation would result in the temporary and permanent loss of potential aquatic habitat (e.g., vernal pools and other seasonal aquatic habitats) and adjacent upland habitat (e.g., annual grasslands and oak woodland), as shown in Table BR-7. Permanent impacts on aquatic habitat would result primarily from the construction of roads, and also minimally from installation of solar panel piles, power poles, and fence posts; temporary impacts on aquatic habitat would primarily occur within the fenceline of the solar array fields. For upland habitat, the majority of permanent impacts on upland habitats would result from construction of roads, the switchyard, the battery energy storage system, and substation; and the vast majority of temporary impacts would result from construction of the solar array fields. However, required implementation of the Aquatic Resources Mitigation Plan (see Mitigation Measure BR-3) would compensate for the potential loss of aquatic habitats that could support this species and restore temporarily impacted aquatic habitat within and around the solar array fields. Furthermore, the project would restore annual grasslands in and around solar fields and continue site grazing as part of the implementation of the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources"), which would help maintain suitable upland habitat for this species on-site after construction and throughout operations.

Table BR-7: Project Impacts on Western Spadefoot Aquatic and Upland Habitat

Habitat Type[1]	Permanent[2] (Acres)	Temporary (Acres)[3]	Total (Acres)
Aquatic	0.42	10.30	10.72
Upland	62.38	1,1,313.33	1,375.71
Total	62.80	1,323.63	1,386.43

1 Suitable aquatic habitat for this species includes all aquatic features within the solar development area. Suitable upland habitat includes oak forest, oak woodland, valley and foothill grassland (within 5,249 ft of suitable aquatic habitat) within the solar development area.

2 Permanent impacts on western spadefoot habitat were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads (including at water crossings), fence posts, inverters, solar panel piles, and poles supporting electrical infrastructure (i.e., pole risers).

3 Temporary impacts on western spadefoot habitat were assessed for the following project components: earthwork limits, inside work areas, laydown areas, photovoltaic (PV) modules, fenced area, gen-tie corridor, the overhead medium voltage transmission line corridor, and exclusion zones.

Temporary and permanent impacts from the proposed project represent approximately 2 percent of suitable aquatic (567 acres) and upland (62,877 acres) habitats for this species in the regional project analysis area (see Plate BR-4). Of the total impact from the proposed project, 8.61 acres of permanent impacts and 279.95 acres of temporary impacts on suitable aquatic and upland habitat for western spadefoot would occur within the Mather Core Recovery Area, an area identified in the vernal pool recovery plan as necessary for the conservation of vernal pool-associated species such as western spadefoot.

Injury or mortality of western spadefoot individuals could result from vehicle/equipment strikes, entrapment in trenches or construction materials, or from being entombed in burrows/aestivation sites during the use of construction equipment or vehicles, if individuals are present in work areas during ground disturbing activities (including as a result of vibration-induced emergence from burrows). Blasting may occur to support grading activities in areas underlain by bedrock (see Plate BR-5). Blasting is not likely to impact this species while in aestivation sites (outside the breeding/dispersal season) as areas of bedrock are not typically considered suitable for this species; furthermore, blasting activities would be sited to avoid aquatic features within the solar development area.

Degradation of adjacent habitat from inadvertent encroachment, fugitive dust, and the introduction of non-native weeds would be unlikely because of implementation of construction BMPs (See Mitigation Measure BR-1a). Implementation of construction BMPs and the project stormwater pollution and prevention plan, as required by existing regulations (see Chapter 10, “Hydrology and Water Quality”, Impact HYD-1), would also largely prevent sedimentation, runoff, and pollution related impacts to off-site wetlands and grasslands that might support this species.

Indirect impacts could include displacement of individuals, or disruption of essential life history activities (e.g., foraging, breeding, nesting, etc.) of western spadefoot in adjacent areas because of increased human presence, light, and noise during operations and maintenance. Installation of seven-foot-tall agricultural-style woven wire fence around solar array fields could impede movement of western spadefoot on site after project construction, particularly if fencing is installed between potential breeding ponds and upland refugia/dispersal sites and does not include specifications for a gap at the bottom to allow for wildlife movement. Injury or mortality of individuals could also result the use of equipment/vehicles on-site during operations and maintenance (e.g., panel washing, mowing, etc.), if project operations occur during the breeding

and dispersal season, and the species is present. In addition, on-site wetlands and other suitable aquatic breeding habitat that are restored after temporary construction impacts could be subject to long-term degradation from shading by solar panels during operations that could change water temperature, vegetation composition, and hydrology (including hydroperiod) of wetlands; this would potentially affect up to 2.34 acres of suitable aquatic habitat for this species present in the PV module portion of the solar development area (i.e., beneath solar panels).

Because the project would impact upland and aquatic habitat for this species, including approximately 289 acres (1.19 percent) of impacts within the Mather Core Recovery Area (USFWS 2005), and could result in injury to or mortality of western spadefoot individuals, if present; this impact would be considered **potentially significant**.

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

Mitigation Measures

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

- *Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands and Other Waters).*
- *Implement Mitigation Measure AG-1 (see Chapter 4, "Agricultural Resources").*
- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *Western spadefoot shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
  - *In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented in the solar development area, 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 western spadefoots are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.*
- *Avoid Aquatic Habitat or Implement Work Window: Where feasible, 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 western spadefoot. All construction and operations activities are prohibited within this buffer area. If aquatic habitats are not avoided, project ground-disturbing activities within such areas (including overland driving of vehicles and equipment) shall be restricted to the Western Spadefoot Work Window (see below).*
- *Western Spadefoot Work Window: Project ground-disturbing activities (including overland driving of vehicles and equipment) within suitable habitat for western spadefoot (e.g., grassland, woodland) shall occur outside of this species' breeding and dispersal seasons (i.e., work to occur after May 15 and before October 15).*
- *Pre-construction Survey: If project ground-disturbing activities must be implemented in potentially suitable habitat for this species 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 conduct a pre-construction survey of the active work areas (including access roads) for western spadefoot prior to initial ground disturbance and prior to work activities in mornings following measurable precipitation events. The survey will include searching small mammal burrows, crevices, and other potential refugia, as well as underneath equipment and inside uncapped stored pipes that are 3 cm (1.2 inches) or greater in diameter. Construction may commence once the biologist has confirmed that no spadefoot are in the work area. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below.

- *Construction Monitoring: If project ground-disturbing activities must be implemented in potentially suitable habitat for this species during the breeding and dispersal season (October 15 to May 15), a qualified biologist experienced with western spadefoot identification and behavior shall monitor the solar development area. The qualified biologist shall be on-site daily while construction-related activities are taking place and shall inspect the solar development area for these species every morning 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 western spadefoot enters an active construction zone. If western spadefoot is encountered, refer to Spadefoot Encounter Protocol, below.*

- *Spadefoot Entrapment Avoidance: 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 (maximum 2:1 slope) at the end of each workday or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches shall be inspected by the qualified biologist each morning prior to and each evening after work activities for the day to ensure that no wildlife has become entrapped and/or to relocate any wildlife that may have become trapped to suitable habitat outside the construction area; relocation would take place only by a qualified biologist with appropriate handling permits. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within potential habitat shall be inspected for western spadefoot by the qualified biologist prior to being moved. If western spadefoot is encountered, refer to WS-6, below.*

- *Spadefoot Encounter Protocol: If a western spadefoot is encountered during project activities, the qualified biologist shall notify CDFW and any other appropriate responsible Agency (e.g., USFWS if the species has become federally listed) immediately. Project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area 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 (if relevant) 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 (if relevant) that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect western spadefoot. Any worker who inadvertently injures or kills a 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 CDFW and USFWS (if relevant) immediately.*

- *Rodent Control: Rodent control shall be allowed only in and around human-occupied portions of the project site.*
- *Spadefoot Friendly Fencing Specifications: During operations, if woven wire fence to be installed around the perimeter of solar array fields would not allow for the passage of western spadefoot (i.e., spacing of woven wire is not sufficient to allow for passage of a western spadefoot), incorporate appropriate design features along the bottom of the perimeter fencing to allow for the movement of western spadefoot across fencing (e.g., incorporate a minimum 3 inch-wide gap between the ground surface and bottom of the fence).*

NORTHWESTERN POND TURTLE

Seven northwestern pond turtle records are documented within five miles of the project site. Furthermore, 10 northwestern pond turtle individuals were observed along Carson Creek during reconnaissance-level surveys conducted for the project from 2021 through 2023. Northwestern pond turtle individuals were primarily observed in association with deeper fringe wetlands with slower moving water.

Project implementation could impact this species through the permanent loss of or temporary disturbance to suitable aquatic habitat (e.g., ditches and ephemeral, intermittent, and perennial channels and nearby aquatic features) and adjacent upland habitats (i.e., blue oak woodland and forest, riparian woodland/forest, and valley and foothill grassland) in the amounts shown in Table BR-8. Similar to that described for the western spadefoot, implementation of Mitigation Measure BR-3 and the Agricultural Management Plan (see Mitigation Measure AG-1) would compensate for habitat loss and restore and maintain some habitat function in the solar development area.

Table BR-8: Project Impacts on Northwestern Pond Turtle Aquatic and Upland Habitat

Habitat Type[1]	Permanent (Acres)[2]	Temporary (Acres)[3]	Total (Acres)
Aquatic	0.34	6.47	6.81
Upland	45.98	1,338.33	1,384.31
Total	46.32	1,344.80	1,391.12

1 Suitable aquatic habitat for this species includes: all linear aquatic features (ditches; ephemeral, intermittent, and perennial channels); and freshwater emergent wetlands, ponds, fringe wetlands, and seeps that occur within 0.25 mile from linear aquatic features. Suitable upland habitat includes all natural communities (i.e., non-urban/developed) within 0.25 mile from suitable aquatic habitat, defined above.

2 Permanent impacts on northwestern pond turtle habitat were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads (including at water crossings), fence posts, inverters, solar panel piles, and poles supporting electrical infrastructure (i.e., pole risers).

3 Temporary impacts on northwestern pond turtle habitat were assessed for the following project components: earthwork limits, inside work areas, laydown areas, photovoltaic (PV) modules, fenced area, gen-tie corridor, and overhead medium voltage transmission line corridor, and exclusion zones.

Temporary and permanent impacts from the proposed project represent less than 1 percent of suitable aquatic habitat (981 acres) and approximately 3 percent of suitable upland habitat (42,743 acres) for this species in the regional project analysis area (see Plate BR-4).Project construction, operations, and maintenance activities could result in injury/ mortality (including in aestivation sites) and/or loss of nests, if this species is present in suitable habitat within the solar

development area during construction or operations in suitable habitat on-site, similar to that described above for western spadefoot.

- Indirect impacts would be similar to that described for western spadefoot, above.
- 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.

- *Implement Mitigation Measure BR-3 (State and Federally Protected Wetlands and Other Waters).*
- *Implement Mitigation Measure AG-1 (see Chapter 4, "Agricultural Resources").*
- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *In addition, if erosion control (described in Mitigation Measure BR-1a) is implemented in the solar development area, 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 turtles are not trapped (i.e., no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.*
  - *This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *Avoid Aquatic Habitat Where Feasible: Where feasible, temporary construction fencing shall be installed a minimum of 300 feet from the potential suitable aquatic habitat for northwestern pond turtle (e.g., streams, ponds, freshwater emergent wetlands, etc.). All construction and operations activities shall be prohibited within this buffer area, or implement the Western Pond Turtle Work Window (see below).*
- *Western Pond Turtle Work Window: For any project-related activities that occur within 300 feet of suitable aquatic habitat, 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.*
- *Western Pond Turtle Pre-Construction Survey: a qualified biologist shall conduct a pre-construction survey for northwestern pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable aquatic habitat. Concurrently with the pre-construction survey, assessments for nesting pits and/or wintering site (e.g., burrows) shall be conducted and any identified sites shall be delineated with high visibility flagging or fencing and avoided during construction activities.*

- *Western Pond Turtle Encounter Protocol: If a northwestern pond turtle, nesting pits, and/or wintering sites are encountered during the pre-construction 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, project activities shall be suspended within a 100-foot radius of the animal until the animal moves out of the work area on its own volition. If necessary, the qualified biologist shall notify CDFW to determine the appropriate procedures related to relocation to nearby suitable habitat. If the animal is handled, a report shall be submitted within one business day to CDFW that includes the date, location, habitat description, circumstances requiring the animal to be handled, and any additional measures taken to further protect northwestern pond turtle. Any worker who inadvertently injures or kills a northwestern pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the qualified biologist.*

- *Work in Aquatic Habitat, Dewatering and Exclusion: If project does not avoid potential aquatic habitats, as described above, scheduled work activities when habitat is naturally dry (e.g., in seasonal aquatic habitats). If project activities must occur in suitable aquatic habitat that is wetted, the following shall be implemented: The wetted aquatic habitat shall be dewatered and remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for a minimum of 15 days prior to the initiation of construction activities. If complete dewatering is not possible, CDFW shall be contacted to determine what additional measures may be necessary to minimize effects to northwestern pond turtle. After aquatic habitat has been dewatered for a minimum of 15 days, exclusion fencing shall be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat within work area boundaries. Exclusionary fencing shall be erected 36 inches above ground and buried at least 6 inches below the ground to prevent any northwestern pond turtles from attempting to burrow or move under the fence into the work area. In addition, high-visibility fencing shall be erected to identify work area limits and to protect adjacent habitat from encroachment of personnel and equipment. Northwestern pond turtle habitat outside exclusionary fencing shall be avoided by all construction or maintenance personnel. The fencing and work area shall be inspected by a qualified biologist before the start of each workday and periodically throughout each workday to ensure that the fencing is intact and that no northwestern pond turtles have entered the work area. Fencing shall be maintained by the contractor or maintenance entity until completion of the work, upon which it shall be completely removed. If, after exclusion fencing and dewatering, northwestern pond turtles are found within the work area, the qualified biologist shall contact CDFW to discuss the next best steps such as the relocation of the individual(s) to suitable aquatic habitat outside the exclusion fencing.*

BURROWING OWL

Eight burrowing owl records are documented within five miles of the solar development area. Furthermore, project surveys conducted from 2021 through 2023 confirmed occupancy of the site vicinity by burrowing owl during its breeding season: one burrowing owl was observed perched in the central northwestern portion of the project site in 2021, approximately 250 feet from the solar development area boundary along the upper reaches of the Carson Creek corridor. Additionally, 11 potential burrows/complexes, one potential burrow/complex with signs of use (e.g., pellets, whitewash, etc.) and an isolated pellet were observed within the solar

development area. Occurrences within the project site were focused along the upper reaches of Carson Creek and lower reaches of Coyote Creek near its confluence with Carson Creek. While observations of this species and its sign were primarily recorded in the northernmost and southwestern most portions of the solar development area, all open areas within the solar development area (e.g., annual grassland) and areas of sparse tree cover (i.e., oak woodland with less than 10 percent canopy cover) provide suitable foraging and nesting habitat for this species.

Project implementation would result in the temporary and permanent loss of annual grasslands, seasonally inundated habitats, and suitable oak woodlands (less than 10 percent cover) that provide potential breeding/foraging and potential wintering habitat for burrowing owl, as identified in Table BR-9. The majority of permanent impacts would be 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 AG-1 (Implement the Agricultural Management Plan, see Chapter 4). However, it has been conservatively assumed that burrowing owls would not use the solar array fields after construction because they typically inhabit areas that are open and sparse. Similarly, areas within the fenced solar facility that would be excluded from development (i.e., exclusion zones) would likely be too small (all are less than 3 acres each) and fragmented to support this species after project construction; therefore, exclusion zones within the fenced solar facility would also be considered a permanent loss of habitat. Therefore, the entire area of suitable habitat for this species within the solar array field, and adjacent areas up to the solar array fence line would be considered a permanent impact on burrowing owl habitat. Permanent loss of burrowing owl habitat would also result from construction of access roads (including at water crossings), the battery energy storage system, substation, switchyard, and the footprint of support poles (i.e., pole risers) used to support the gen-tie and overhead medium voltage collection lines. Temporary construction areas outside the solar array field perimeter fence line, such as inside work areas, earthwork limits, laydown areas, and work area corridors associated with the overhead electrical system (gen-tie and medium voltage lines) (refer to Plate BR-5) would all be restored to suitable habitat, per implementation of the Agricultural Management Plan, that could be used by burrowing owl post-construction.

Table BR-9: Project Impacts on Burrowing Owl Nesting and Foraging Habitat

Habitat Type[1]	Permanent (Acres)[2]	Temporary (Acres)[3]	Total (Acres)
Nesting and Foraging Habitat	1,064.03	220.99	1,285.02

1 Suitable nesting (and foraging) habitat for this species within the solar development area includes: valley and foothill grassland and blue oak woodland. The following additional seasonally inundated features were included as potentially suitable foraging habitat: ditch, ephemeral channel, intermittent channel, upland swale, seasonal wetland, seasonal wetland swale, vernal pool, and vernal swale.

2 Permanent impacts on burrowing owl habitat were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads (including at water crossings), fence posts, inverters, solar panel piles, PV modules, fenced area, exclusion areas (where they occur within the fenceline of the solar array fields), and the poles supporting electrical infrastructure (i.e., pole risers).

3 Temporary impacts on burrowing owl habitat were assessed for the following project components: earthwork limits, inside work areas, laydown areas, gen-tie corridor, the overhead medium voltage transmission line corridor, and exclusion areas (where they occur outside the fenceline of the solar array fields).

The project-related permanent loss of suitable nesting/foraging habitat for burrowing owl (see Table BR-9) would be approximately 1,064 acres, representing approximately 2 percent of suitable habitat (59,433 acres) for this species in the regional project analysis area (see Plate

BR-4). Project indirect impacts could also cause habitat degradation for this species similar to that described under "Special-status Plant Species," above.

Construction-related ground disturbance could destroy potentially active and/or occupied burrows during site clearing and grading (such as through crushing and entombing immobile eggs or juveniles if present during the breeding season), 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 three potentially active burrows/complexes (with sign) and 37 additional suitable burrows/complexes in or within 500 feet of the solar development area that could be impacted in one or more of these ways if burrowing owl are active within any of these burrows during construction.

Since it is assumed that burrowing owl would not be likely to use the solar field facility once developed, potential impacts on burrowing owl during project operations would most likely be limited to indirect harassment and or displacement of individuals in adjacent areas from increased human presence, specific operation and maintenance activities (e.g., mowing, panel washing), and facility lighting.

Injury to or mortality of burrowing owls, their nests, or young, or the direct 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 AG-1 (see Chapter 4, "Agricultural Resources").*
- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *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, where*

feasible in the solar development area (i.e., temporary impact areas) 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 by a qualified biologist 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 within temporary impact areas.*
- *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 additional measures described below if the performance standards of no net loss of burrowing owl nesting and foraging habitat value are not being met.*
- *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 implemented 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 to achieve the no net loss performance standard through acquisition of a conservation easement or mitigation credits from an appropriate mitigation bank, or another form of mitigation, as approved by CDFW. Compensation may be layered with other mitigation requirements, such as for Swainson's hawk foraging habitat (see Mitigation Measure BR-1f, if acceptable by CDFW).*

SWAINSON'S HAWK

NESTING HABITAT

Fourteen Swainson's hawk records are documented within five miles of the project site, five of which were within the last 20 years; the nearest are northwest of the project site and south of the project site at the confluence of Deer Creek and Carson Creek (CDFW 2024e, Plate BR-2). Project surveys from 2021 through 2023 confirmed use of the solar development area and vicinity by this species. During 2023 surveys, several courting pairs of Swainson's hawks were observed in proximity to potential nest sites (i.e., trees with nest structures present) within the

solar development area; but no confirmed active Swainson's hawk nest sites were located within the solar development area. A total of 24 Swainson's hawk individuals were observed foraging, perching, and displaying courtship within the solar development area; primarily within the southwestern portion of the solar development area near the confluence of Coyote Creek and Carson Creek and scattered elsewhere along these two drainages within the solar development area. Trees within and adjacent to the solar development area (see Section "Native and Non-Native Trees," above) may provide additional potential nesting habitat for this species within and outside of the project site. Suitable nesting habitat for this species within the solar development area includes blue oak woodlands, blue oak woodlands (forest), and riparian woodland/forest; much of which occurs in proximity to or along drainage corridors (Table BR-1, Plate BR-1). Development of the project would result in permanent and temporary impacts to potential nesting habitat, and potentially to nesting Swainson's hawks, if active nests are present within and adjacent to the solar development area during construction and/or operations, as described below.

Project construction would result in the direct permanent removal of five potential nest sites (i.e., trees with raptor nest structures present) in the southern portion of the solar development area. Removal of a known active nest site could reduce future reproductive success of Swainson's hawk that return to breed the following season(s) after nest site removal because the pair(s) must search for, possibly compete for, and potentially build new nest sites before they can breed. Furthermore, the project would result in the permanent loss of additional potential nesting habitat in the amounts shown in Table BR-10. Permanent loss of nesting habitat would result from the permanent removal of all trees from the entire solar development area prior to project development, including areas subject to temporary construction impacts and long-term development, operations and maintenance (see also Impact BR-5). Many of the trees proposed for removal from the solar development area are large and potentially suitable for Swainson's hawk nesting (refer to Appendix BR-1, Project Arborist Report for tree data). Temporary noise and visual disturbances during the approximately 18-month construction period could temporarily reduce the quality and use of adjacent nesting habitat, especially when Swainson's hawk are present in the region during the nesting season.

Table BR-10: Project Impacts on Swainson's Hawk Nesting and Foraging Habitat.

Habitat Type[1]	Permanent (Acres)[2]	Temporary (Acres)[3]	Total (Acres)
Nesting Habitat	291.45	0.0	291.45
Foraging Habitat	911.10	187.65	1,098.75
Total	1,202.55	187.65	1,390.20

1 Suitable nesting habitat for this species within the solar development area includes: blue oak woodland, blue oak woodland (forest), and riparian woodland/forest. Suitable foraging habitat within the solar development area includes: valley and foothill grassland, ditch, ephemeral channel, intermittent channel, upland swale, seasonal wetland, seasonal wetland swale, vernal pool, and vernal swale.

2 Permanent impacts on nesting habitat for Swainson's hawk were assessed for all project components associated with the site plan, except exclusion zones, because permanent tree removal would occur from all areas of the project footprint, except from exclusion zones. Permanent impacts on foraging habitat for Swainson's hawk were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads (including at water crossings), fence posts, inverters, solar panel piles, PV modules, fenced area, exclusion zones (where they occur within the fenced solar array fields), and the poles supporting electrical infrastructure (i.e., pole risers).

3 Temporary impacts on foraging habitat for Swainson's hawk were assessed for the following project components: earthwork limits, inside work areas, laydown areas, gen-tie corridor, the overhead medium voltage transmission line corridor, exclusion zones (where they occur within the fenced solar array fields).

In addition, project construction, including grading and grubbing, near suitable nesting habitat (e.g., riparian or woodland/forest habitats) could indirectly disturb Swainson's hawk nest sites, if active nests are located within 0.5 mile of work activities within the solar development area during project construction. Increased levels of noise and human activity within 0.5 mile of an active nest could result in nest abandonment or forced fledging and subsequent incidental loss of fertile eggs, nestlings, or juveniles; or the harassment of adults. In particular, blasting could cause elevated noise levels above the 50-60 dBA noise threshold, within 0.5 mile, as described under "Impact Summary," above. During operations, noise from operating facilities would not be expected to exceed 62 dBA beyond 50 feet from project inverters, the primary source of onsite noise (see Chapter 12; Table NOI-16); therefore, Swainson's hawk may avoid nesting within approximately 50 feet of these locations during the 35-year operation of the facility.

The project-related permanent loss of nesting habitat for Swainson's hawk (Table BR-10) would be approximately 291 acres, which represents 21 percent of suitable nesting habitat (1,362 acres) within the regional project analysis area.

FORAGING HABITAT

The project site and vicinity provide suitable foraging habitat for Swainson's Hawk, as directly observed during project surveys. Two active raptor (not Swainson's hawk) nest sites located in and within 0.5 mile from the solar development area during project surveys highlights the potential suitability of the solar development area and vicinity as foraging habitat for locally nesting Swainson's hawk. Additionally, 29 Swainson's hawk nests or presumed nest sites (none reportedly active in the last five years) have been documented since 1962 within 10 miles of the project site, primarily along the Cosumnes River corridor (CDFW 2024e); and further highlighting the potential regional value of grasslands and other open habitats in and near the project site as foraging habitat for this species. Suitable foraging habitat for this species within the solar development area includes valley and foothill grassland and other seasonally inundated open habitats that offer seasonal foraging opportunities in summer and fall (e.g., seasonal wetlands, swales, etc.) (Table BR-1). Development of the proposed project would result in permanent and temporary impacts to grassland and additional seasonal foraging habitat for Swainson's hawk, as described below.

The permanent loss of Swainson's hawk foraging habitat is assumed to result from construction of the solar facility within the full extent of the area within the proposed facility fence line (e.g., fenced solar array fields), and including other permanent development areas outside the fenced solar array fields (See Plate BR-5). Specifically, construction of the substation, battery energy storage system, switchyard, access roads, and overhead electrical transmission poles would permanently convert foraging habitat to non-habitat (i.e., unvegetated condition) outside the fenced solar array fields. Within the fenced solar array fields, construction of project components like solar panel supports (i.e., piles), inverters, and perimeter fence posts would also permanently convert foraging habitat to non-habitat. There is some recent research related to whether Swainson's hawk and other raptors would make foraging use of solar array fields in Sacramento County, including the spaces between the solar panel supports. A study in 2013 and an update in 2021 commissioned by Dudek and prepared by Jim Estep suggests that Swainson's hawk and other raptors have used and foraged within managed solar array fields.[1]

[1] Estep Environmental Consulting. 2021 (November). Swainson's Hawk and Other Raptor Foraging Use of Solar Array Fields within an Agricultural Landscape in Sacramento County, Year 2.

However, because it is not definitively known whether Swainson's hawk would use vegetated areas beneath solar panels or between solar array rows or blocks, and consistent with the requirements of the Sacramento County Swainson's Hawk Ordinance, it has been conservatively assumed that all potential foraging habitat 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 blocks and the adjacent proposed facility fence line may be too fragmented to support foraging Swainson's hawk; therefore, it has been conservatively assumed that all potential foraging habitat within the fenced solar facility would no longer function as Swainson's hawk foraging habitat after project construction and throughout operations. Table BR-10 identifies the total acres of potential foraging habitat for Swainson's hawk that would be permanently converted to non-habitat as a result of the proposed project.

Temporary disturbances to foraging habitat would result from construction-related ground disturbances and earthwork occurring outside the solar facility fenceline that are necessary to support construction of the project, including work within the earthwork limits, inside work areas, laydown areas, and within the gen-tie and medium voltage overhead transmission corridors. Total acres of temporary disturbance to potential foraging habitat as a result of the proposed project is shown in Table BR-10. All temporary disturbance areas would be restored to grassland upon completion of construction and managed primarily through a grazing program during operations to maintain low grass heights throughout the year, as required by Mitigation Measure AG-1 (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources"). Indirect impacts from long-term facility operations within the solar array fields or other facilities (substation, battery energy storage system, switchyard) could occur in areas adjacent to the solar development area, including areas subject to temporary disturbance after these areas are restored, such as from noise or visual disturbances during maintenance activities that might temporarily alter use of these adjacent restored areas by Swainson's hawk.

Implementation of the Agricultural Management Plan (Mitigation Measure AG-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 because restored temporary disturbance areas would be located outside the facility fenceline and contiguous with adjacent suitable foraging habitat for this species.

Construction-generated disturbances could also cause Swainson's hawk to temporarily avoid foraging in areas adjacent to the project site.

Annual grassland is abundant in eastern Sacramento County. Swainson's hawk foraging habitat in the vicinity of the project site is not considered high value foraging habitat because of the relatively lower density of Swainson's hawk in eastern Sacramento County compared to that in the western part of the County (Sacramento County et al. 2018). The project-related permanent loss of foraging habitat for Swainson's hawk (Table BR-10) would be approximately 911 acres, representing 2 percent of 57,088 acres of non-high value foraging habitat potentially available to this species within the regional project analysis area.

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 solar development area could decrease available foraging habitat for locally nesting Swainson's hawks in the vicinity of the solar development area. Depending on the intensity of Swainson's hawk use of the affected foraging habitat, the

project-related loss of foraging habitat could result in displacement of nesting pairs, reduction in reproduction potential, or decreased survival rates, particularly for hawks nesting within 0.5 mile of the project site.

The permanent loss of grassland foraging habitat for Swainson's hawk in proximity to potential nest sites within or adjacent to the solar development area would be considered a significant impact. Therefore, the permanent loss of an estimated 911.10 acres of Swainson's hawk foraging habitat as a result of project development would be considered a potentially 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-80 zoning designation, the project would likely be required by Sacramento County to mitigate foraging habitat losses to attain a value of 100 percent of the existing foraging habitat area, or the equivalent of 911.10 acres – the final determination would be based on final approved construction design plans.

Indirect impacts on adjacent foraging habitat from construction or operations and maintenance activities that introduce weeds or create dust could reduce habitat quality.

IMPACTS ON INDIVIDUALS

In addition to impacts on nesting Swainson's hawk described under "Nesting Habitat," above, construction of the approximately 1.3-mile-long gen-tie powerline from the substation to the existing SMUD regional distribution facilities located within the Prairie City State Vehicle Recreation Area and approximately 4.6 miles of medium-voltage overhead transmission lines could pose a collision and/or electrocution risk to Swainson's hawk in the vicinity of the project site.

CONCLUSION

Potential injury to or mortality of Swainson's hawk (including loss of an active nest) or the substantial permanent loss of nesting or foraging habitat (including loss of a recently active nest site/tree) 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 Nesting and Foraging Habitat.

- *Implement the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources").*
- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *During the two survey periods immediately preceding commencement of construction occurring 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).

- *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 mile of the project site during preconstruction Swainson's nesting surveys described above, 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 within 0.5 mile of the project site during construction.*

- *If impacts on SWHA individuals cannot be fully avoided, obtain an incidental take permit from CDFW for anticipated take of SWHA nesting sites and foraging habitat and for potential project-related take of individuals.*

- *To minimize potential for collision by or electrocution of nesting raptors, including Swainson's hawk, 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 (e.g., grassland and other seasonal open areas) 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) that provide permanent protection of mitigation lands. Under the County of Sacramento program, mitigation for permanent loss of foraging habitat is required for the change in habitat value from the existing condition (100 percent of foraging habitat value remaining based on the AG-80 zoning) to the post-project habitat value. Permanent impacts to foraging habitat from the proposed project would be determined once final approved construction design plans are completed and shall be compensated for at 100 percent of the acres of permanent impact; at the time of writing of this document, the total permanent impact on foraging habitat was estimated at 911.10 acres corresponding to a compensatory mitigation requirement of 911.10 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)*

[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.

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 for foraging habitat is achieved outside the Swainson's Hawk Mitigation Program, it shall at minimum meet the mitigation requirement of the Program.

- *The project applicant shall avoid removal of known active Swainson's hawk nest trees[3] to the maximum extent practicable. Compensation shall be provided for the permanent loss of occupied Swainson's hawk nesting habitat, (i.e., removal of known active nest sites/trees to achieve a performance standard of no net loss of habitat acreage, function and values to Swainson's hawk through implementation of a Tree Resource Revegetation Plan (see Mitigation Measure BR-2). A Tree Resource Compliance and Mitigation Memorandum prepared by the Applicant shall be updated to meet the requirements identified herein for the Tree Resource Revegetation Plan for approval of the County prior to project-related tree removal.*
- *Incorporate measures into the Tree Resource Revegetation Plan that shall:*

  1) *ensure mitigation be directed to lands identified on the Open Space Vision Diagram and associated component maps in the Sacramento County General Plan (per General Plan Policy CO-60),*

  2) *ensure mitigation lands are permanently protected (per General Plan Policy CO-62) and have a monitoring and management program with established funding (per General Plan Policy CO-66),*

  3) *ensure compensatory mitigation has similar nesting habitat value for Swainson's hawk (e.g., occupied nesting habitat or adjacent to occupied nesting habitat; occupied being equivalent to having one or more nests active in the past five years and adjacent being equivalent to being within 10 miles from known active nest sites for this species),*

  4) *ensure removal of known nest sites/trees occurs outside the Swainson's hawk nesting season and when the nest site/tree is not active as determined by a qualified biologist (generally between October 1 and February 1), and*

  5) *replace known active nest sites/trees[2] in kind at a minimum ratio of 3:1 and include monitoring annually for five years to assess the effectiveness of tree replacement. The performance standard for nest tree replacement shall be 65 percent survival of all replacement plantings after five years. The Tree Resource Revegetation Plan shall be reviewed and approved by CDFW and the County prior to removal of any trees, including those containing raptor nest structures.*

TRICOLORED BLACKBIRD

Three previously documented occurrences of this species overlap or are immediately adjacent to the solar development area and an additional 15 records of this species are documented within five miles of the project site. Furthermore, focused tricolored blackbird surveys for the project resulted in many observations of this species throughout the entirety of the project site, several were observed scattered along the east side of the Coyote Creek drainage west of Scott

[3] An active nest site/tree includes any nest site/tree that has been documented to be active by Swainson's hawk within the prior five years.

Road and a several were observed (including numerous potential nest sites) along the Carson Creek drainage east of Scott Road. Most observations were outside of the solar development area, but within 500 feet of the solar development area boundary. No nesting colonies were directly observed, but potential nest sites were identified between approximately 80 and 650 feet of the solar development area. Only three tricolored blackbird observations (i.e., individuals vocalizing) were recorded within the solar development area; two along the solar development area boundary closest to Coyote Creek in the southeastern portion of the site and the third along the northwestern edge of the site. Very little potentially suitable nesting habitat (i.e., ponds, fringe wetlands, seasonal wetlands with riparian scrub vegetation, and perennial channel; see Table BR-1), and a much greater extent of foraging habitat (i.e., valley and foothill grasslands; seasonal wetlands; vernal pools; and upland, seasonal wetland, and vernal swales) for this species is present within the solar development area.

Project development could impact tricolored blackbird through the temporary or permanent removal of habitat in the amounts shown in Table BR-11, or injury/mortality of individuals if this species is present within or adjacent to the solar development area during project activities. However, individuals are mobile, and other than immobile nests, would be expected to move out of harm's way during project activities. While implementation of the Agricultural Management Plan would preclude re-establishment of the very small amount of nesting habitat impacted in the solar development area, it would restore areas of temporary impact to grasslands that would be expected to retain foraging habitat value for this species throughout operations.

Table BR-11. Project Impacts on Tricolored Blackbird Nesting and Foraging Habitat.

Habitat Type[1]	Permanent (Acres)[2]	Temporary (Acres)[3]	Total (Acres)
Nesting Habitat	0.42	0	0.42
Foraging Habitat	53.26	1,029.02	1,082.28
Total	53.68	1,029.02	1,082.70

1 Suitable nesting habitat for this species that is present within the solar development area includes: fringe wetlands, ponds, seasonal wetlands with dense riparian scrub vegetation, and potentially perennial channels. Suitable foraging habitat includes all remaining non-forested natural habitats on-site: valley and foothill grasslands; ditches, ephemeral channels, intermittent channels, seasonal wetlands (remaining areas), seeps, vernal pools, upland swales, seasonal wetland swales, and vernal swales).

2 Permanent impacts on tricolored blackbird foraging habitat were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads (including at water crossings), fence posts, inverters, solar panel piles, poles supporting electrical infrastructure (i.e., pole risers).

3 Temporary impacts on tricolored blackbird foraging habitat were assessed for the following project components: earthwork limits, inside work areas, laydown areas, PV modules, fenced area, gen-tie corridor, the overhead medium voltage transmission line corridor.

Although there is a large amount of grassland and cropland available as foraging habitat in the region, the project-related temporary and permanent removal of foraging habitat could decrease foraging opportunities for locally nesting tricolored blackbirds which could in turn result in displacement of nesting pairs, reduction in reproductive potential, or decreased survival rates in the short-term and over the long-term operational life of the project.

Project construction could also impact tricolored blackbird nests, but only if active nests for this species become established in suitable nesting habitat in the solar development area or in close proximity (i.e., within 500 feet of the solar development area) 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 solar development area.

Project operations and maintenance could disrupt tricolored blackbird activities, such as causing temporary displacement or reduced foraging success within or near the solar development area, or reduced nesting success in adjacent areas from ground disturbing activities (e.g., mowing), human presence, noise, and light.

According to the most recent state-wide survey for this species (CDFW 2022), approximately 13 percent of the state-wide population of tricolored blackbirds occurs in Sacramento County across 15 occupied sites; Tulare County observed a similar percent of the state-wide population and only Merced and Kern counties observed greater percentages. Furthermore, two of the 10 largest nesting colonies reported were from Sacramento County (CDFW 2022), one approximately 6 miles southwest of the project site and the other approximately 8 miles to the southwest. Prior observations of nesting colonies within and adjacent to the solar development area were recorded most recently in 2015 and 2016 (CDFW 2024e). This highlights the potential importance of eastern Sacramento County, where the project site is located, to the statewide population.

Potential injury to or mortality of tricolored blackbirds (including loss of an active nest or reduced nesting success of a nearby colony) 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.

Mitigation Measures

BR-1g: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird.

- *Implement the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources").*
- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *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.*

VALLEY ELDERBERRY LONGHORN BEETLE

Valley elderberry longhorn beetle has not been previously documented within the project site. However, five occurrences have been recorded within five miles, including several to the northwest along the American River and to the west and southwest of the project site; the nearest occurrence is documented between White Rock Road and Douglas Road approximately two miles to the west. A large proportion of known occurrences for this species in south Sacramento County are located along the Cosumnes River approximately five miles south of the project site (Sacramento County 2018); additional concentrations of occurrences are located to the north approximately 4 miles, north of U.S. Highway 50 along the American River corridor (Plate BR-2). Focused project surveys for this species identified 10 elderberry shrubs suitable for inhabitation by valley elderberry longhorn beetle (i.e., with stems one inch or greater in diameter) that are in or within 165 feet of the solar development area and could be affected by project implementation (Table BR-12; see also Appendix BR-1a, Figure 15); all of which are along the proposed gen-tie corridor.

Project implementation would not result in the removal of elderberry shrubs suitable for inhabitation by Valley elderberry longhorn beetle. Potential for direct impacts on elderberry shrubs suitable for inhabitation by Valley elderberry longhorn beetle, such as from limb trimming or from ground disturbances within 20 feet (e.g., grading, trenching) that could lead to shrub mortality, are not anticipated due to the general flexibility in siting of gen-tie project components which can typically be shifted to avoid such direct impacts (refer to Mitigation Measures, below). However, seven elderberry shrubs suitable for inhabitation by Valley elderberry longhorn beetle (i.e., potential habitat) and an additional three elderberry shrubs potentially occupied by Valley elderberry longhorn beetle (i.e. potentially occupied habitat) are located within the solar development area or within 165 feet from the solar development area and may be subject to indirect impacts from nearby project activities associated with construction of the proposed gen-tie (Table BR-12).

Table BR-12: Summary of Focused Surveys and Potential Impacts of the Proposed Project for Valley Elderberry Longhorn Beetle

Shrub ID	Habitat Context[1]	Distance from Solar Development Area (Feet)	Focused Survey Result	Potential Impact Type[2]
1	Upland	31	No relict bore/exit holes, no presence observed	Indirect (potential habitat)
2	Upland	38	No relict bore/exit holes, no presence observed	Indirect (potential habitat)
3	Riparian	13	No relict bore/exit holes, no presence observed	Indirect (potential habitat)
4	Riparian	0, within	No relict bore/exit holes, no presence observed	Indirect (potential habitat)
5	Riparian	0, within	No relict bore/exit holes, no presence observed	Indirect (potential habitat)
6	Riparian	11	***Relict bore/exit holes***, no presence observed	Indirect (potentially occupied habitat)
7	Upland	28	No relict bore/exit holes, no presence observed	Indirect (potential habitat)
8	Upland	0, within	No relict bore/exit holes, no presence observed	Indirect (potential habitat)
9[3]	Upland	0, within	***Relict bore/exit holes***, no presence observed	Indirect (potentially occupied habitat)
10[3]	Upland	0, within	***Relict bore/exit holes***, no presence observed	Indirect (potentially occupied habitat)

Notes:
[1] Riparian indicated by shrubs occurring along intermittent channels
[2] Potential Impact Type
Direct: Permanent physical damage leading to the loss of a shrub that is suitable for Valley elderberry longhorn beetle (i.e., stems one inch or greater in diameter) is likely from project activities. This typically would be assumed from the project-related removal of a suitable shrub, not for the purposes of translocation, and could result from actions of shrub trimming or from ground disturbing work within 20 feet from a suitable shrub.
Indirect: Reasonably foreseeable effect from project activities on adjacent suitable shrubs located more than 20 feet, but within 165 feet, from the project disturbance footprint, such as from dust or soil compaction.
No Impact: Shrub would not be affected directly or indirectly from project actions; shrub is greater than 165 feet from any project-related disturbance.
[3] Cluster of more than one elderberry shrub in one location. Shrub in fair condition; there are some minor structural or health problems that pose no immediate danger.
ID = identification

Any impact to valley elderberry longhorn beetle, or potentially occupied habitat for this species (e.g., elderberry shrubs with bore/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.

- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *Project disturbances shall be avoided within 20 feet from elderberry shrubs potentially suitable for this species (i.e., with stems one inch or greater in diameter).*
- *Indirect impacts to individual elderberry shrubs potentially suitable for inhabitation by Valley elderberry longhorn beetle (i.e., with stems one inch or greater in diameter) and that are located between 20 to 165 feet of project ground disturbances shall be avoided by 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 or compensated through transplanting existing elderberry shrubs and/or planting new seedling elderberry plants in areas not subject to project disturbance at a performance standard 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.*
  - *Transplanting. If full avoidance of elderberry shrub(s) in the development footprint is not possible, the project proponent will transplant shrub(s) using appropriate best management practices.*
  - *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. 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 within the solar development area 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 solar development area 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.*

SPECIAL-STATUS AQUATIC INVERTEBRATES

Numerous records of special-status aquatic invertebrates (i.e., vernal pool fairy shrimp and vernal pool tadpole shrimp) are located within five miles of the solar development area, including records for both of these species that overlap the proposed gen-tie alignment and switchyard area in the northwest portion of the solar development area and in pools directly north of the solar development area (see Plate BR-2). The nearest designated critical habitat unit for both of these species is approximately five miles west of the project site (Plate BR-2) (USFWS 2023b). While protocol-level surveys for these species were not conducted, approximately 8.59 acres of vernal pool and other seasonally inundated habitats that provide potentially suitable habitat for special-status aquatic invertebrates is present and assumed to be occupied by these two species within the solar development area.

Refer to the impact discussion under Impact BR-3 below for a description of potential permanent, temporary, and indirect impacts to wetlands/other waters, which would be similar to impacts on potentially suitable habitat for special-status aquatic invertebrates. 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.

Table BR-13 summarizes potential impacts associated with suitable aquatic habitat for special-status aquatic invertebrates in the solar development area, including impacts on suitable wetlands and other waters within the Mather Core Area identified in the 2005 Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005). The total project-related impacts on special-status aquatic invertebrate habitat within the Mather Core Area (3.69 acres) represents approximately 16 percent of the 22.64 acres of suitable aquatic habitat present for this species within the portion of the project site that overlaps the Mather Core Area conversely, approximately 84 percent of suitable aquatic habitat would not be impacted within the Mather Core Area of the project site. Recovery Plan goals for the Mather Core Area identify a protection goal of 85 to 95 percent of suitable habitat for these species within the Mather Core Area (USFWS 2005). Therefore, the project would result in approximately 1 percent less than the target level of protection identified for this species in the vernal pool Recovery Plan, when evaluated at the scale of the project site.

Table BR-13. Project-Related Impacts on Suitable Aquatic Habitat for Special-Status Aquatic Invertebrates.

Habitat Type[1]	Permanent (Acres)[2]	Temporary (Acres)[3]	Indirect (Acres)[4]	Total (Acres)
Suitable aquatic habitat (outside Mather Core Area)	0.17	6.46	1.50	6.63
Suitable aquatic habitat (within Mather Core Area)	0.15	3.54	0.83	3.69
Suitable aquatic habitat (total impact)	0.32	10.00	2.34	10.32

1 Suitable habitat for special-status aquatic invertebrates that is present within the solar development area includes the following aquatic cover types: ditch, ephemeral channel, intermittent channel, pond, seasonal wetland, seasonal wetland swale, upland swale, vernal swale, and vernal pool.
2 Permanent impacts on suitable aquatic habitat for special-status aquatic invertebrates were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads (including at water crossings), fence posts, inverters, solar panel piles, and the poles supporting electrical infrastructure (i.e., pole risers).
3 Temporary impacts on suitable aquatic habitat for special-status aquatic invertebrates were assessed for the following project components: earthwork limits, inside work areas, laydown areas, PV modules, fenced area, gen-tie corridor, the overhead medium voltage transmission line corridor, and exclusion zones.
4 Indirect impacts on suitable aquatic habitat for special-status aquatic invertebrates were additionally assessed for the following project components, which are categorized as both indirect and temporary impacts (as described under Impact BR-3): PV modules

Any impact to vernal pool fairy shrimp or vernal pool tadpole 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 and Vernal Pool Tadpole Shrimp.

- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *Federally listed vernal pool branchiopod species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *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 practicable, implement Mitigation Measure BR-3, Avoid, Minimize, Restore, 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 and vernal pool tadpole shrimp. Direct and indirect effects to on-site suitable aquatic habitats that may support federally listed vernal pool branchiopods shall be offset through on-site 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.

- *As part of the Aquatic Resources Mitigation Plan to be implemented as part of Mitigation Measure BR-3, incorporate preservation of suitable aquatic habitat for special-status aquatic invertebrates that occurs within the Mather Core Area of the project site (i.e., Barton Ranch property) to the maximum extent practicable as a component of the compensatory mitigation, or otherwise compensate for the permanent, temporary, and indirect impacts on suitable habitat for special-status aquatic invertebrates within the Mather Core Area portion of the project site with mitigation lands that also occur within the Mather Core Area.*

AMERICAN BADGER

American badger has not been documented within the solar development area; however, one record (from 1990) is documented approximately 4.5 miles southwest of the project site (Plate BR-2) and suitable habitat is present in grasslands, open woodlands, and other seasonally inundated open habitats that offer seasonal foraging opportunities in summer and fall (e.g., seasonal wetlands, swales, etc.).

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 in the solar development area, impacts could include a loss of occupied habitat (i.e., annual grassland, blue oak woodland) within the solar development area similar to that described for burrowing owl in Table BR-9, destruction of potentially active and/or occupied burrows, injury/mortality of individual badger, and/or harassment from adjacent construction that agitates denning badger.

In addition, this species is largely nocturnal and generally avoids areas of human presence, so the operations and maintenance of the project could continue to impact the habitat quality of the solar development area and vicinity; the species may not use developed areas of the solar development area after construction (e.g., within fenced solar array fields, and other developed facilities).

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.

- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *This species shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *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, blue oak woodlands, and seasonally inundated wetlands/waters) within the solar development area. 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 badgers 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.*

OTHER NESTING RAPTORS AND MIGRATORY BIRDS

Potential nesting habitat within the solar development area for migratory bird species includes grasslands that are primarily for ground-nesting species, such as northern harrier and grasshopper sparrow, as well as oak woodland/forest and riparian supporting trees suitable for several raptor species. Bald eagles and white-tailed kites were observed within the solar development area vicinity, but nesting habitat for bald eagle, and other large soaring raptors (e.g., golden eagle), is not present in the solar development area or vicinity.

Project development would remove vegetation in amounts shown in Table BR-12, and numerous trees (see Table BR-2), which have 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, including during ongoing operations and maintenance activities. 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 solar development area during construction could result in nest destruction, abandonment, and failure.

Solar panels and associated infrastructure can pose a risk of collisions and electrocutions. Birds inadvertently flying into solar panels may result in injury or mortality (Kagan et al. 2014), as discussed in detail under “Project Impacts and Mitigation Measures,” above. 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) leaving stranded individuals subject to subsequent starvation, exposure, or predation-related mortality. Electric lines (i.e., gen-tie and medium voltage 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 an Avian Protection Plan (see Mitigation Measures, below) would reduce these potential impacts.

The loss of potential foraging habitat for grassland- and woodland/riparian-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]) and implementation of a Tree Resource Compliance and Mitigation Plan (see Mitigation Measure BR-5) 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 and woodland/riparian habitat would be preserved and re-established in proximity to the solar development area to mitigate for impacts on tree resources and Swainson's hawk nesting habitat.

The 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-1k shall be implemented as part of the project.

Mitigation Measures

BR-1k: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds.

- *Implement Mitigation Measure BR-1a (Construction Best Management Practices)*
  - *Protection measures for nesting raptors and migratory birds shall be included in the WEAP described under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *A qualified biologist shall conduct a survey for nesting birds within one week prior to vegetation/tree removal or ground-disturbing activities within suitable habitat during the nesting season (i.e., February 1 through August 31). The survey shall cover the limits of construction and accessible suitable nesting habitat within 500 feet (and within 0.25 mile for potential raptor nests). 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 500 feet (or more for some raptors) and shall be determined based on factors such as the species of bird, topographic features, existing background disturbance levels, 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. Typical nest buffers implemented are as follows:*
  - *50-150 feet for passerines and other non-raptors*
  - *500 feet for raptors and owls*
- *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.

- *Vegetation or tree removal shall be restricted to the period of September 1 through January 31, to avoid the bird nesting season, including for Swainson's hawk (see Mitigation Measure BR-1f). 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 above, 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. Tree removal must also conform to requirements stated in Mitigation Measure BR-1f, for Swainson's hawk, as applicable.*
- *An Avian Protection Plan (APP) shall be prepared and implemented in coordination with CDFW and USFWS to reduce/eliminate impacts to avian species during construction, operations, and maintenance. An Avian Protection Plan is often prepared in combination with a Bat Protection Plan (see Mitigation Measure BR-1l, for Bats) for solar facilities, becoming the Avian and Bat Protection Plan (ABPP). The APP (or ABPP, if combined) shall include the following elements:*
  - *A description of conditions for bird species present in and near the solar development area, including results of site-specific surveys.*
  - *An assessment of potential risks of project construction, operation, and maintenance on birds 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 bird 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 bird species.*
  - *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.*

NATIVE BATS

Native bat roosting habitat within the solar development area, 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 roadway bridges adjacent to the solar development area. No active bat roosts or signs of occupation, such as guano or staining, were detected during the reconnaissance-level field surveys or incidentally during other surveys conducted on-site.

If bat maternity roosts or winter hibernacula are located in or adjacent to the solar development area, impacts could result from the permanent removal of roosting sites, such as the removal of trees and snags (see Table BR-2), or from construction-related noise or vibrations in proximity to an occupied roosting site that results in roost abandonment and potential bat mortality. In particular, blasting would cause elevated noise levels above 60 dBA within 0.5 mile, even with implementation of blasting mats and temporary noise barriers (See Chapter 12, "Noise"); this threshold has been identified by Caltrans (2020) to likely overestimate potential for roost displacement. Additional discussion of blasting impacts are discussed under "Project Impacts and Mitigation Measures," above. During operations, noise from operating facilities would not be expected to exceed 62 dBA beyond 50 feet from inverters (see Chapter 12; Table NOI-16); therefore, bat roosts if present within approximately 50 feet of the built project site may be displaced during the 35-year operation of the facility.

In addition, solar panels may pose a risk of bat collisions into solar panels that may result in injury or mortality (Kagan et al. 2014) as described under "Project Impacts and Mitigation Measures," above. A recent study at 19 PV solar facilities in southwest England found reduced bat activity at PV solar facilities compared to areas without such development (Tinsley et al. 2023). A meta-analysis of over 60 reports on fatality surveys at 18 renewable energy facilities in southern inland California, including at seven solar facilities, noted bat carcasses were rarely reported as found at solar facilities (Conkling et al. 2023).

Bats are protected by the State under CFGC Section 4150 for non-game mammals. 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-1l shall be implemented as part of the project.

Mitigation Measures

BR-1l: Avoid, Minimize, and Mitigate for Impacts on Bats.

- *Implement Mitigation Measure BR-1a (Construction Best Management Practices).*
  - *Native bats shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *A qualified biologist shall conduct a preconstruction habitat assessment for potential communal bat roosts within the solar development area and a 300-foot buffer to the solar development area, ideally one year in advance of, but 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., hollows in trees, bridges), 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. 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, as relevant.*

- *A Bat Protection Plan (BPP) shall be prepared and implemented for approval by CDFW and USFWS prior to construction. The intent of the BPP is to reduce/eliminate impacts to native bat species during construction, operations, and maintenance. A BPP is often prepared in combination with an APP for solar facilities (see Mitigation Measure BR-1k, for Birds), referred to as an ABPP. The BPP (or ABPP, if combined) shall include the following elements:*
  - *A description of conditions for bat species present in and near the solar development area, including results of site-specific surveys.*
  - *An assessment of potential risks of project construction, operation, and maintenance on 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 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 bat species.*

CROTCH'S BUMBLE BEE

Crotch's bumble bee has not been previously documented within the solar development area and was not observed during focused project surveys for nesting habitat and nectar resources (i.e., foraging habitat) conducted in 2023. However, one occurrence (from 2020) of this species is documented within five miles of the project site, approximately 4.7 miles to the west, within the potential foraging range and queen dispersal distance from nest sites for some bumble bees [CDFW 2023]). In addition, a total of 462 potential nesting locations (e.g., existing burrows, down woody debris, tree cavities, etc.) and numerous suitable floral resources were identified throughout the solar development area and vicinity during focused surveys, primarily in grasslands and oak woodlands and forest with floral resources concentrated in the lower lying areas within grasslands. Based on these factors, this species has moderate potential to occur in the solar development area.

Ground disturbing construction of the project could destroy nesting colonies or overwintering gynes (i.e., future queens), if present in rodent burrows or in other ground surface features. Overwintering habitat for the majority of North American bumble bees is poorly understood; sloping areas or areas under trees insulated with moss or leaf litter have been found to support overwintering gynes. Permanent loss of grassland and woodland vegetation from the solar development area (see Table BR-6) could also reduce available floral food resources for this species in the solar development area or vicinity; however, implementation of mitigation measure AG-1 (Agricultural Management Plan) would incorporate pollinator plants into the seed mix that could benefit this species.

The potential destruction of nest 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 BR-1a (Construction Best Management Practices).*
  - *Crotch's bumble bee shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *Prior to construction, a qualified biologist shall conduct (1) a habitat assessment and (2) focused surveys to detect foraging Crotch's bumble bees and potential nesting sites, that are consistent with CDFW's Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species (CDFW's Survey Considerations) (CDFW, dated June 6, 2023 or more current CDFW guidelines if available), in potential suitable habitat prior to construction (i.e., ground disturbing activities) within the solar development area during the peak Colony Active period (i.e., approximately April through September) when floral resources are present, ideally during the peak bloom. The habitat assessment shall include historical and current species occurrences; document potential habitat on site including foraging, nesting, and/or overwintering resources; and quantify which plant species are in bloom and their percent cover, and other items described in CDFW's Survey Considerations. Focused surveys for foraging bees and nesting sites shall be conducted on 3 separate occasions spaced 2-4 weeks apart during the Colony Active Period, in accordance with details specified in CDFW's Survey Considerations. Only individuals with appropriate handling authorizations shall be allowed to capture or handle bumble bees. Because bumble bees move their nests every year, focused surveys shall be conducted prior to project activities resulting from potential ground and vegetation disturbance in each year construction activities occur.*
- *Consistent with CDFW's Survey Considerations, if no Crotch's bumble bees are found during focused surveys, but the habitat assessment identified suitable nesting, foraging, or overwintering habitat within the solar development area, it is recommended that a biological monitor be on-site during vegetation or ground disturbing activities that take place during any of the Queen and Gyne Flight Period and Colony Active Period.*
- *If Crotch's bumble bee is detected, the qualified biologist shall notify CDFW, and survey data shall be submitted to CDFW via a written report and also via CNDDB. The written survey report will be submitted to CDFW within 30 days of the pre-construction survey. The report will include survey methods, weather conditions, and survey results, including a list of insect species observed and a figure showing the locations of any Crotch's bumble bee nest sites or individuals observed. If nests are observed, the survey report will also include the qualifications/resumes of the surveyor and qualified biologists for identification of photo vouchers, detailed habitat assessment, photo vouchers, and recommendations for avoidance. In addition, if Crotch's bumble bee is detected in the solar development area, then a site-specific Crotch's Bumble Bee Avoidance and Minimization Plan shall be prepared and implemented in coordination with CDFW to avoid take, or consult with CDFW to obtain an Incidental Take Permit (ITP) if take of Crotch's bumble bees may*

occur during project activities. The plan shall include a description of on-site habitat, potential nest and overwintering sites present, recommendations for avoidance and minimization (such as active nest avoidance buffers). If an ITP is sought, mitigation for the loss of potential nest sites will be fulfilled at a minimum 1:1 nesting habitat replacement of equal or better functions and values to those impacted by the project, and may include measures 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 and/or ITP 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**. These reasons include:

- construction BMPs and AMMs (e.g., speed limits, covering trenches or installing escape ramps, invasive weed spread prevention, 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 on-site 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 up to date locations of special-status species within or adjacent to the solar development area;
- 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 or near known occurrences, such as for special-status plants, western spadefoot, northwestern pond turtle, Swainson's hawk, tricolored blackbird, valley elderberry longhorn beetle, nesting birds, and Crotch's bumble bee 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 on-site 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.

MONARCH BUTTERFLY

The Monarch butterfly has a low to moderate potential to occur on the project site. Adult monarchs depend on diverse nectar sources and caterpillars are dependent on milkweed. There are some wind-protected tree groves, but there are limited suitable nectar sources according to the December 2024 Biological Technical Report by Dudek. As also noted by Dudek, milkweed has not been observed withing the project site and the species has not been documented within five miles of the project site. Therefore, the impact would be **less than significant**.

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, as defined in “Sensitive Natural Communities” under the “Environmental Setting” section above, are present in the solar development area: vernal pools that resemble Northern hardpan vernal pool habitat, potentially jurisdictional waters of the U.S. and of the State, grassland bird habitat, riparian habitat, valley needlegrass grassland (as a minor component of the valley and foothill grassland community), and oak woodlands. No designated critical habitat is located within the solar development area. Essential fish habitat (Central Valley steelhead/Chinook salmon) is not present within solar development area.

VERNAL POOLS AND POTENTIALLY JURISDICTIONAL WETLANDS (AND OTHER WATERS)

As indicated in Table BR-5, a trace amount of vernal pools would be permanently impacted (from construction of the perimeter fence) and temporarily impacted (in work areas associated with the solar array fields, exclusion zones, and along the gen-tie corridor) by the project up to 0.17 acres. Wetlands and other waters would be permanently impacted up to 0.43-acre, as detailed identified in Table BR-14. However, implementation of Mitigation Measure BR-3 would avoid, minimize and compensate for potential impacts on this sensitive resource, including other potentially jurisdictional waters of the U.S. and State.

GRASSLAND BIRD HABITAT

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 and associated open habitats (see Table BR-10; foraging habitat impacts); these grassland areas impacted could support regionally-important grassland bird species in addition to Swainson’s hawk foraging. However, temporary disturbances to annual grasslands and associated open habitats (i.e., Swainson’s hawk foraging habitat) would be restored upon completion of project construction as a result of required implementation of the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, “Agricultural Resources”). Indirect impacts that degrade adjacent grassland could result from stormwater runoff, fugitive dust or pollution, or changes in hydrology from site development; however, these impacts are anticipated to be largely prevented and minimized through implementation of construction best management practices, the project stormwater

pollution and prevention plan, and other permits required by existing regulations (see Chapter 10, Impact HYD-1).

Riparian Habitat

Riparian habitat occurs primarily along Carson and Coyote creeks outside of, but adjacent to, the solar development area. The project would largely avoid riparian habitat, except in a few locations where roads and medium voltage overhead lines would cross these creeks or associated intermittent tributaries, and several locations where solar field developments (and adjacent temporary work areas) extend into the edge of riparian zones. A total of 4.19 acres of riparian habitat, including 173 riparian trees, at the northernmost and southernmost extents of Coyote Creek and at various points along Carson Creek within the solar development area would be permanently removed as a result of construction of the solar field arrays, access roads, and associated electrical infrastructure. This impact represents approximately 15 percent of the total 28.36 acres of riparian habitat present within the project site (see Table BR-1). Due to the rarity of this habitat in the Central Valley, any loss of riparian habitat would be considered a substantial impact on the environment without mitigation. Implementation of a Tree Resource Revegetation Plan would mitigate for the project-related loss of riparian habitat, including riparian trees.

Valley Needlegrass Grassland Community

Valley needlegrass grassland occurs in small patches along ridgetops of low-lying hills within the annual grassland vegetation community on-site; however, the specific locations of this sensitive natural community have not been mapped within the solar development area and, therefore, a quantification of the magnitude of potential impacts from the project on this sensitive community type has not yet been assessed. Implementation of the Agricultural Management Plan (i.e., Mitigation Measure AG-1), including reseeding of temporary impact areas to grassland conditions, would minimize impacts on this sensitive natural community.

Oak Woodlands

Approximately 607 acres of oak woodlands occur in the project site scattered throughout much of the eastern portion of the solar development area and project site, but primarily along the northern and southern portions of Coyote Creek, in the southwest near the confluence of Coyote and Carson creeks, and all along the eastern edge of the project site. The project would result in the permanent loss of approximately 287 acres of oak woodland/forest land cover (see Table BR-5), and the associated removal of up to 4,787 trees (4,450 of which are protected oaks), including some trees that are dead or in severe decline, representing a loss of 54.61 acres of oak canopy area from the solar development area during construction.

Approximately two-thirds or 10 million acres of California's oak woodlands remain intact across 54 of the 58 counties in the state; however, only 4 percent are protected from conversion. Over 30,000 acres are being lost to development each year (approximately 0.3 percent per year), statewide (Standiford and Scott 2001). According to the Sacramento County General Plan EIR, the eastern portion of the County supports extensive oak woodlands; this portion of the county is largely unfragmented, has experienced relatively low disturbance, and retains high wildlife values.

Sacramento County does not have a quantitative significance threshold for impacts to oak woodlands or native trees. Removal of 287 acres of oak woodlands from the solar development

area represents approximately 47 percent of oak woodland/forest within the project site. The project proposes to implement mitigation for the loss of oak woodlands consistent with the County General Plan policies (see also Impact BR-5).

Any impact on a sensitive natural community from project development would be **potentially significant.** To reduce impacts on sensitive natural communities, the following mitigation measures shall be implemented as part of the project.

Mitigation Measures

BR-2: Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities.

- *Implement Mitigation Measure BR-1a (Construction BMPs).*
  - *Riparian habitat and other sensitive natural communities shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *Implement Mitigation Measure BR-1f (Swainson's Hawk).*
- *Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands and Other Waters).*
- *Implement Valley Needlegrass Grassland Protection Measures as follows:*
  - *A qualified biologist shall conduct a preconstruction survey in advance of ground disturbing activities and vegetation removal occurring in areas with potential for this sensitive community type, to map any occurrences of Valley needlegrass grassland within the solar development area. Surveys shall be conducted at an appropriate time of year for detection of purple needlegrass (Stipa [Nassella] pulchra).*
  - *If mapped occurrences of Valley Needlegrass Grassland are identified within the solar development area impact footprint, prior to project implementation, project designs shall be refined within the solar development area boundaries (e.g., location, orientation, and shape of solar arrays; perimeter fence alignment; location of pole risers supporting medium voltage electrical lines) to avoid and/or minimize potential impacts on mapped areas of this sensitive natural community to the maximum extent feasible without increasing impacts on other resources. Areas to be avoided will be fenced off or otherwise identified (e.g., with flagging, on site plan maps) for avoidance and a qualified biologist will be present to monitor all construction work activities within 100 feet from identified avoidance areas to ensure no unauthorized impacts occur.*
  - *If mapped occurrences of Valley Needlegrass Grassland are identified within the solar development area impact footprint and cannot be avoided, incorporate specific restoration and management prescriptions consistent with the long-term preservation of Valley Needlegrass Grassland occurrences on-site into the Agricultural Management Plan to be implemented as part of Mitigation Measure AG-1 (see Chapter 4, "Agricultural Resources"). This could include specific prescriptions such as plant or topsoil salvage for replacement after ground disturbing activities, incorporating purple needlegrass (Stipa pulchra) and other associated species seed into the restoration seed mix in areas where Valley Needlegrass grassland have been impacted by the project, mowing after seed set of purple needlegrass, prohibiting*

ground-disturbing operational activities in these areas, restricting operational activities to "drive and crush." A monitoring and adaptive management approach shall also be identified for implementation throughout the operational life of the project (including the first year post-construction and every five years on average thereafter) to confirm re-establishment and continued occupancy of the solar development area by Valley Needlegrass Grassland throughout the operational live of the project, at a performance standard of no net loss of mapped occurrences of this community type within the solar development area.

- *Implement Oak Woodland and Native Tree Mitigation, as follows:*
  - *The project applicant shall mitigate for impacts to oak woodlands (i.e., oak canopy loss), and for the loss of native oaks and other native trees species (i.e., native tree removal) by implementing the following three mitigation components: 1) avoidance and minimization of native trees retained within and adjacent to the solar development area, 2) preservation of oak woodlands at a 1:1 preservation to impact ratio of native oak tree canopy area lost, and 3) in-kind establishment plantings of native trees at a 1:1 tree replacement ratio, as further detailed below, and as described in a Tree Resource Mitigation Plan developed by the project applicant and subject to approval by Sacramento County prior to issuance of a grading permit.*

  1) *Avoidance and Minimization:*

     - *Retain and protect native trees within the solar development area that would not conflict with construction or operational activities of the project, as determined by a qualified arborist upon review of final construction drawings in collaboration with the project applicant. Retained and protected trees could include those located within identified exclusion zones or in temporary work areas outside of the facility fenceline (e.g., along the gen-tie and within earthwork limits).*

     - *Identify root protection zones (at a minimum inclusive of the tree dripline) for all native trees to be retained and protected within the solar development area. Root protection zones shall be clearly identified on final construction drawings. Temporary orange construction fencing or a similar protective barrier shall be installed one foot outside the root protection zones of retained native trees prior to initiating project construction. To the maximum extent feasible, soil disturbance (e.g., scraping, grading, trenching, excavation) is to be avoided within root protection zones. If work is necessary within identified root protection zones, a qualified arborist shall provide specifications for this work such as methods for root pruning, backfilling specifications, and irrigation management guidelines.*

     - *For native trees identified to be retained and protected within the solar development area (see above), retain a qualified arborist who shall:*

       - *Clearly designate an area within the solar development area that is outside the root protection zones of all trees where construction materials may be stored/stockpiled and where vehicle and equipment parking can take place. No materials storage/stockpiling or parking shall take place within the root protection zones of retained trees.*

- *Establish specifications for care of the retained trees within the solar development area. Implement recommended tree care or oversee the implementation of tree care if conducted by a construction contractor, and develop and implement a tree inspection schedule to ensure tree health is being maintained throughout the construction period and for one year post construction. Tree care specifications may be adjusted by the qualified arborist as needed to provide optimal tree health as a result of inspections. Potential tree care performance standards shall at minimum include:*
    - *Prior to any grading or other work within 50 feet of any tree to be retained, a qualified arborist shall determine whether irrigation needs to be installed from April through September and/or placement of a 4- to 6-inch layer of chip mulch over the root protection zone of any trees is required to minimize potential for impact.*
    - *All work to be performed inside the root protection zone shall have fencing (i.e., exclusion fencing) installed at the edge of construction in accordance with recommendations of a qualified arborist; the exclusion fencing shall be inspected by the qualified arborist prior to grading and/or grubbing to ensure it is functional; any fence deficiencies shall be corrected before associated work activities may begin.*
    - *The qualified arborist shall supervise any recommended clearance pruning, irrigation, fertilization, and placement of mulch and/or chemical treatments. Chemical treatments shall not occur without authorization by the qualified arborist.*
    - *Trenching inside the root protection zone, if necessary, shall be by a hydraulic or air spade, placing pipes underneath the roots, or boring deeper trenches underneath the roots.*
    - *Clearance pruning, if necessary, shall include removal of all the lower foliage that may interfere with equipment prior to having grading or other equipment on-site. A qualified arborist shall approve the extent of foliage removal in accordance with ANSI A300 standards and oversee the pruning to be performed by a contractor.*

- *Grading beneath trees to be retained shall be given special attention. A qualified arborist shall identify actions to avoid creating conditions adverse to any retained tree's health. The natural ground within the root protection zones of retained/protected trees shall remain undisturbed as determined by a qualified arborist to increase the likelihood of survival of the retained/protected trees. Grading within the root protection zones of native trees shall not be permitted unless specifically authorized by Sacramento County.*
    - *No grade cuts greater than one foot shall occur within the root protection zones of native trees to be retained, and no grade cuts whatsoever shall occur within five feet of their trunks.*
        - *Major roots two inches or greater in diameter encountered within any retained tree's root protection zone during excavation shall not be cut and shall be kept moist and covered with earth as soon as possible.*

- *Roots one inch to two inches in diameter encountered within any retained tree's root protection zone during excavation that are severed shall be trimmed and treated with pruning compound and covered with earth as soon as possible.*
- *Support roots encountered within any retained tree's root protection zone during excavation shall be protected. A qualified arborist shall be required to hand-dig in the vicinity of retained trees to prevent root cutting and mangling that may be caused by heavy equipment.*
- *All stumps within the root protection zone of trees to be retained shall be ground out using a stump router or left in place. No trunk within the root protection zone of retained trees shall be removed using a backhoe or other piece of grading equipment.*

– *No fill greater than one foot shall be placed within the root protection zones of native trees to be preserved and no fill whatsoever shall be placed within five feet of their trunks. Fill material shall not be placed in such a manner that encases the tree. Surface water drainage must be able to move away from the tree.*

– *No irrigation system shall be installed within the root protection zones of native tree(s) to be retained that may be detrimental to the preservation of the native tree(s) unless specifically authorized by Sacramento County.*

2) *Oak Preservation:*

- *Consistent with Sacramento County Policy CO-140, compensation for the unavoidable loss of native oak tree canopy area as a result of project construction shall be provided by the project applicant to achieve a performance standard of no net loss, defined as a minimum 1:1 preservation to impact ratio of native oak tree canopy area lost, through one or more of the following options. The removal of, and compensation for native oak tree canopy area shall be quantified in the Tree Resource Mitigation Plan, subject to Sacramento County review and approval:*

  – *On-site preservation of native oak tree canopy shall be considered as a first priority for fulfillment of this preservation mitigation requirement. For the purposes of this mitigation measure, "on-site" constitutes being within Adjacent Other Lands (Plate PD-2, Project Setting) of the project site, or immediately adjacent to the project site such that at least a portion of the boundary of the preservation area directly borders oak woodlands in the project site. On-site native oak tree canopy preservation shall preserve the main, central portions of consolidated and isolated groves constituting the existing canopy on-site, and provide an area on-site that compensates for canopy area lost. On-site preservation areas shall prioritize areas that provide connectivity between existing oak woodlands and forest and/or riparian habitat that may serve as potential wildlife movement corridors. The native oak canopy preservation area must be a single contiguous area on-site, adjacent to existing oak canopy to ensure opportunities for regeneration, and at least equal to the size of canopy area lost or else additional compensation as described below (i.e., off-site preservation, preservation bank credit purchase, or in-lieu fee to a tree preservation fund) shall be required to ensure no net loss.*

- *If on-site mitigation does not achieve the no net loss performance standard, off-site preservation may be considered in entirety or in combination with on-site preservation. The off-site preservation area shall meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity. Protected woodland habitat could be used as a suitable site for establishment tree plantings (see 3, Establishment, below), if appropriate and approved by Sacramento County.*
    - *Be equal or greater in area to the total area that is included within a radius of 30 feet of the root protection zone of all trees to be removed;*
    - *Be adjacent to a protected stream corridor or other preserved natural areas;*
    - *Support a significant number of native broadleaf trees;*
    - *Offer good potential for continued regeneration of an integrated woodland community;*
    - *Be located within the boundaries of Sacramento County; and*
    - *Be within parcels immediately adjacent to and surrounding the project site parcels such that the boundary of the off-site preservation parcel(s) share a boundary, at least in part, with the project site parcel boundaries. If preservation of adjacent parcels is not feasible, then preservation shall be within mapped areas of Savannah and Blue Oak Woodland on the Habitat Component map of the Open Space Vision Diagram included in the Sacramento County General Plan.*
- *A combination of on-site or off-site preservation, as described above.*
- *Oak tree canopy area lost shall be calculated as the total collective area of contiguous canopy cover representing the downward projection of the crown or crowns of overlapping adjacent tree canopies (i.e., outer extent of leaves and small twigs) for all native oak trees to be removed according to the County-approved final project designs. Oak tree canopy area shall be calculated using a consistent method for determining canopy area impacts as for identifying a suitable mitigation area and may be calculated as described in the Arborist Report Coyote Creek Agrivoltaic Ranch Project, dated August 2023 (Dudek 2023). At the time of preparation of this environmental impact report, a total of 54.61 acres of native oak tree canopy area was estimated to be permanently lost and an equal amount would be required for preservation as described in this mitigation measure.*
- *If neither on-site nor off-site preservation is sufficient to achieve the no net loss performance standard, or if the full preservation mitigation requirement cannot be accomplished with on-site and off-site preservation alone, the project applicant shall fulfill any remaining preservation mitigation requirement through either:*
    - *a preservation bank credit purchase for an equivalent oak canopy area of blue oak woodland, or*
    - *a sum equivalent to the replacement cost for all unmitigated trees within the solar development area shall be paid by the project applicant as an "in-lieu fee" to the*

County's Tree Preservation Fund or another appropriate tree preservation fund (e.g., Sacramento Valley Conservancy). The total amount to be paid shall be based on the current cost per inch in DBH inch for all trees to be mitigated and shall be approved by Sacramento County.

- *Any on- and/or off-site preservation lands used or acquired to fulfill this compensatory mitigation requirement shall include legal protections for protection into perpetuity (e.g., conservation easement, restrictive covenant, or other Sacramento County-approved mechanism). In addition, the project applicant shall provide funding for (1) acquisition in fee title or any legal protections of the preservation lands, (2) initial habitat improvements (if needed), (3) long-term habitat maintenance and management of the preservation lands in perpetuity, and (4) preparation of a Preserve Management Plan that describes the preserved oak canopy resources on-site, responsible parties, management goals and objectives, management activities, and reporting requirements. The responsibilities for acquisition and management of the preservation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the County. Funding for on- and/or off-site preservation lands shall be estimated through preparation of a Property Analysis Record (PAR), or PAR-Equivalent Analysis, which is an itemized cost estimate of the initial and capital period costs and annual, ongoing costs of in-perpetuity land management.*

- *Preservation as described in this measure either through on-site or off-site means, a preservation bank credit purchase, in-lieu fee, or a combination thereof representing the full mitigation requirement as identified in this mitigation measure shall be completed within 24 months from the start of project-related tree removal activities; any extension must be approved by Sacramento County. If preservation is not completed prior to the start of tree removal activities, the project applicant shall provide financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, initial improvements (if needed), and long-term maintenance and management of preservation lands and/or to cover any additional mitigation options (e.g., bank credit purchase, in-lieu fees). Financial assurance shall be provided to Sacramento County prior to the issuance of a grading permit and can be provided in the form of irrevocable letter of credit, bond, a pledged savings account, or another form of security as approved by the County. The total amount of financial assurances shall be determined by an updated appraisal and PAR or PAR-Equivalent Analysis as described above.*

3) *Additional Establishment and Enhancement:*

   - *In addition to the first two steps of this three-part mitigation measure described above, the effects of the removal of oak trees shall be further mitigated and compensated for by the project applicant through establishment and enhancement of oak trees and native trees other than oaks.*

   - *In consideration of the Sacramento County General Plan Policies CO-139 and CO-140, compensation for the loss of native oak trees, and native trees other than oaks, that are greater than 6 inches DBH shall be provided by the project applicant through in-kind establishment plantings of native tree species with a minimum*

performance standard of a 1:1 tree replacement ratio of surviving trees[4] at 7 years after replacement (i.e., planting) to those removed/lost. The removal of, and compensation for native trees shall be quantified in the Tree Resource Mitigation Plan, subject to Sacramento County review and approval.

- *The establishment planting area shall be described in the Tree Resource Mitigation Plan, including rationale demonstrating the value of the establishment planting area to oak woodlands conservation in Sacramento County and the region (e.g., wildlife movement corridor) and the characteristics that make the planting area well suited for successful establishment. The establishment planting area shall, at minimum, meet the following listed criteria:*
  - *be suitable for tree planting – in particular for native tree and oak species targeted for mitigation (consistent with Sacramento General Plan Policy CO-133),*
  - *be large enough to accommodate the planned establishment plantings,*
  - *be located within the boundaries of Sacramento County,*
  - *be within parcels immediately adjacent to, and surrounding project site parcels such that the boundary of the off-site preservation parcel(s) share a boundary, at least in part, with the project site parcel boundaries. If preservation of adjacent parcels is not feasible, then preservation shall be within mapped areas of Savannah and Blue Oak Woodland on the Habitat Component map of the Open Space Vision Diagram included in the Sacramento County General Plan or in areas which support the appropriate soil characteristics to support oak woodland growth and regeneration, and*
  - *Mitigation tree plantings within the establishment planting area shall not:*
    - *conflict with current or planned land uses,*
    - *require removal of existing natural habitats to accommodate establishment plantings (although removal of dead trees to facilitate plantings that serve to promote stand recruitment may occur),*
    - *create unnatural canopy closure that would reduce wildlife value or contribute to increased fire hazard.*

- *Establishment plantings shall be accomplished by any of the following approaches, or a combination thereof, and to be detailed in a Sacramento County-approved Tree Resource Mitigation Plan.*
  - *Stand infill plantings within on-site or off-site preservation areas serving as compensation for oak tree canopy area lost (see #1, Preservation, above). This could include actions such as replacing dead/dying trees or providing additional understory recruitment at natural densities in an otherwise healthy stand.*

[4] A surviving tree is any tree determined to be alive and with a health rating of fair or better, as assessed by a qualified arborist.

- *Restoration focused plantings on new lands acquired in fee title or for which an easement is obtained that historically supported but current lack presence of trees/woodland habitat in all or some areas that would be targeted for large-scale establishment plantings.*
- *Funding one or more tree planting projects in partnership with a local conservancy or existing preserve that would at minimum meet the required establishment performance standard. An example includes providing mitigation funding for blue oak woodland regeneration projects in Deer Creek Hills Preserve as identified in the Deer Creek Hills Preserve Master Plan.*
- *Any combination of above.*

- *Establishment plantings shall be accomplished through one or more of the following methods, to be detailed in the Tree Resource Mitigation Plan:*

  1) *for oak trees, acorn plantings, shall be completed by collecting acorns from on-site or nearby locations off-site (i.e., local sources) in accordance with published guidance specific to blue oak acorn regeneration (McCreary 2001),*
  2) *for native trees, container tree plantings may be used for establishment plantings.*
     - *This mitigation measure does not preclude over-planting such that the minimum performance standard (see above) shall be accomplished at the end of the 7-year maintenance and monitoring period.*

- *Establishment planting plans shall be developed by a qualified oak restoration specialist and detailed in the Tree Resource Mitigation Plan to be reviewed and approved by Sacramento County. Establishment planting plans shall address, at minimum, the following:*
  - *project-related impact on native tree resources, including oak trees and riparian trees.*
  - *establishment planting goals and performance standards (i.e., success criteria), including interim performance targets for evaluating progress towards success criteria.*
  - *suitability of the site for proposed tree plantings demonstrated with soil information, aerial photography, and/or other resources.*
  - *for native oak tree plantings, provide information on acorn collection, storage, planting methods, and planting schedule; for native tree plantings, other than for oak trees, provide information on tree container sizes targeted for planting, planting methods, and planting schedule*
  - *planting densities per species based on plant material type (e.g., acorn, size of tree container), accepted practice, current research, site-specific conditions, establishment goals, performance standards, and the recommendations of a qualified arborist.*
  - *consistency with accepted native tree planting standards, including those for oak trees outlined in Regenerating Rangeland Oaks in California (McCreary 2009), How to Grow California Oaks (McCreary 1995), How to Collect, Store and Plant Acorns (McCreary*

undated), and other applicable publications and protocols that may be established by the University of California, Division of Agriculture and Natural Resources.

- *maintenance (e.g., weed control/pest management, fertilization, tree/seedling protection, or other best management practices, etc.), monitoring, and reporting requirements and schedules to ensure performance targets are being met throughout the 7-year establishment period, calculated from the day of planting. At minimum, performance monitoring and reporting shall be required annually for 3 years post-planting and at the end of years 5 and 7.*
- *contingencies (i.e., adaptive management) if interim performance targets or success criteria at the end of the 7-year monitoring term are not met, such as additional or replacement plantings or payment of an "in lieu" fee similar to that described under 2-Preservation, above, based on the current cost per DBH inch[5] set by the County that remains unmitigated by the end of the 7-year monitoring term.*

- *Any on- and/or off-site mitigation lands used or acquired to fulfill this establishment mitigation requirement shall include legal protections for protection in perpetuity, including restrictions on land use (if necessary) to ensure compatibility with long term goals for tree establishment (e.g., conservation easement, restrictive covenant, or other Sacramento County-approved mechanism). In addition, the project applicant shall provide funding for 1) acquisition in fee title or any legal protections of mitigation lands, 2) establishment plantings necessary to meet performance standards, 3) long-term habitat maintenance and management of mitigation lands in perpetuity, and 4) preparation of a Preserve Management Plan that describes the mitigated tree resources established on-site, responsible parties, management goals and objectives, management activities, and reporting requirements. The responsibilities for acquisition and management of the mitigation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the County. Funding for mitigation lands shall be estimated through preparation of a PAR, or PAR-Equivalent Analysis, which is an itemized cost estimate of the initial and capital period costs and annual, ongoing costs of in-perpetuity land management.*
- *Establishment planting representing the full mitigation requirement as identified in this above mitigation measure shall be completed within 24 months from the start of project-related tree removal activities; any extension must be approved by Sacramento County. If establishment planting is not completed prior to the start of tree removal activities, the project applicant shall provide financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, establishment plantings, and long-term maintenance and management of mitigation lands and/or to cover any additional mitigation options (e.g., contingency plantings, in lieu fees). Financial assurance shall be provided to Sacramento County prior to the start of tree removal activities and can be provided in the form of irrevocable letter of credit, bond, a pledged savings account, or another form of security as approved by the County. The total amount of financial*

[5] One inch DBH is equivalent to one seedling.

assurances shall be determined by an updated appraisal and PAR or PAR-Equivalent Analysis as described above.

Significance after Mitigation

Implementation of Mitigation Measures BR-1a (Construction BMPs), BR-1f (Swainson's Hawk), BR-3 (State or Federally Protected Wetlands), and measures for the protection of Valley Needlegrass Grassland, and Tree Resource Protection and Revegetation Plan would reduce potential project-related impacts on vernal pools, potentially jurisdictional wetlands and other waters, grassland bird habitat, and riparian habitat 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, implementation of an Aquatic Resources Mitigation Plan and Implementation of Valley Needlegrass Grassland protection measures into the Agricultural Management Plan to be implemented as part of Mitigation Measure AG-1, would minimize loss of, restore, and maintain on-site grasslands, including Valley Needlegrass Grassland, vernal pools and other jurisdictional aquatic habitats, and riparian habitat through project design refinements and avoidance (where feasible), re-vegetation, and vegetation management; and would compensate for residual losses of these sensitive natural community types to achieve no net loss of acreage, function, and values per specified performance standards of success and consistent with required project permits, where relevant.

With the implementation of required oak woodlands and native tree mitigation, the impact of the proposed project would be considered **less than significant** because the project is mitigating above and beyond County General Plan policy requirements. The project is required to avoid impacts to native trees retained within and adjacent to the solar development area, preservation of oak woodland canopy at a 1:1 ratio consistent with Sacramento County General Plan Policy CO-140 or equivalent preservation bank credit purchase. Additionally, the project would establish plantings of native trees at a 1:1 tree replacement ratio – all under the direction of a qualified arborist and subject to review, approval, monitoring, and adaptive management directed by Sacramento County, and with required financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, establishment plantings, and long-term maintenance and management of mitigation lands and/or to cover any additional mitigation options.

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

Based on the aquatic resources delineation conducted by Dudek in 2021 (see Appendix BR-1, Aquatic Resources Delineation Report), approximately 10.72 acres of aquatic resources are present in the 1,412-acre solar development area (see Table BR-1). Because jurisdiction has not been verified by the appropriate regulatory agencies, all aquatic features within the solar development area are considered to be potentially jurisdictional wetlands and other waters of the U.S. and waters (including wetlands) of the State.

While the project was designed to maintain existing drainage patterns and on-site hydrology and to avoid and minimize grading impacts on aquatic resources (see also Chapter 10, Hydrology

and Water Quality), residual project developments within or adjacent to wetlands/other waters could have adverse impacts on this protected resource. Direct permanent impacts could occur from the permanent modification (i.e., dredge and/or fill) of wetlands/other waters as a result of the placement of fill during grading/site preparation (but not from blasting), during installation of new equipment, or from mechanical driving of new support piles into the ground as part of construction of the following project components that overlap with wetlands/waters resources: switchyard, roads and associated water crossings, fence posts, solar array supports (i.e., piles), and utility poles (i.e., pole risers) associated with medium voltage lines.

Wetlands/other waters outside the direct permanent disturbance area may be subject to temporary and/or indirect impacts. Temporary impacts could result from overland travel by vehicles and heavy equipment and ground disturbances within construction-related work areas associated with installation of the solar facility both within and immediately outside the area enclosed by the perimeter fence, and installation of the overhead electrical infrastructure, where these work areas overlap wetlands/other waters (i.e., earthwork limits, inside work areas, fenced area, PV modules, and the gen-tie and overhead transmission corridors). Areas of temporary impact would be restored to approximate pre-project conditions with respect to vegetation and hydrology through implementation of Mitigation Measure BR-1a (in particular Soil Compaction and Revegetation) and the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4).

Indirect impacts on wetlands/other waters could result from the long-term shading of suitable aquatic habitat located under solar panels during project operations (i.e., within the PV Module portion of the proposed project); this could cause changes in water temperature, vegetation communities, and hydroperiod. Indirect impacts could also occur in offsite wetlands/other waters from increases in sedimentation and runoff from adjacent construction activities, or in some cases from construction activities that are within the same aquatic feature such as work occurring in upstream areas. Indirect impacts may also result from changes in the type and amount of pollutants entering wetlands/other waters from implementation of the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4) which would involve a change in land use within the solar development area from cattle grazing to primarily sheep grazing and possibly mechanical treatment (e.g., mowing). Implementation of construction best management practices (see Mitigation Measure BR-1a; in particular Erosion Control, Equipment Storage and Fueling, Dust Control), Temporary Channel Re-routing, and Design for Stream Channel Alterations, the project stormwater pollution and prevention plan, and other permits required by existing regulations (see Chapter 10, Impact HYD-1), would largely prevent indirect impacts from sedimentation, runoff, and pollutant related impacts to off-site wetlands and other waters.

Project development could result in the permanent and temporary loss of, and indirect impacts to, potentially jurisdictional wetlands and other waters of the U.S. and of the State in the amounts shown in Table BR-14.

Table BR-14: Project-Related Impacts on Potentially Jurisdictional Wetlands and Other Waters of the U.S. and of the State[1].

Habitat Type	Permanent[2] (Acres)	Temporary (Acres)[3]	Indirect (Acres)[4]	Total (Acres)
Wetlands	0.08	3.78	0.66	3.86
Other Waters	0.35	6.52	1.67	6.86
Total	0.43	10.30	2.34	10.72

CDFW = California Department of Fish and Wildlife

1 Acreages represent CDFW jurisdiction (i.e., top of bank or outer limits of riparian vegetation); representing the maximum potential impact on wetlands and other waters resources.

2 Permanent impacts on wetlands and other waters were assessed for the following project components: the battery energy storage system, substation, switchyard, access roads (including at water crossings), fence posts, inverters, solar panel piles, and the poles supporting electrical infrastructure (i.e., pole risers).

3 Temporary impacts on wetlands and other waters were assessed for the following project components: earthwork limits, inside work areas, laydown areas, PV modules, fenced area, gen-tie corridor, the overhead medium voltage transmission line corridor, and exclusion zones.

4 Indirect impacts on wetlands and other waters were additionally assessed for the following project components, which overlap entirely with temporary impacts: PV modules.

Any impact on State and/or 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, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan.

- *Implement standard construction BMPs provided in Mitigation Measure BR-1a, in particular Construction Fencing, Erosion Control, Equipment Storage and Fueling, Dust Control, Soil Compaction, and Revegetation to protect adjacent wetlands and other waters from unauthorized encroachment and/or impacts outside the solar development area.*
  - *Jurisdictional aquatic resources shall be included in the WEAP discussed under "Training of Construction Staff" in Mitigation Measure BR-1a.*
- *Prior to project implementation, project designs shall be refined within the solar development area boundaries (e.g., location, orientation, and shape of solar arrays; perimeter fence alignment; location of pole risers supporting medium voltage electrical lines) to avoid and/or minimize potential impacts on State and federally-protected wetlands and other waters, including riparian habitat, and to maintain hydrological and biological connectivity through the solar development area without increasing impacts on other resources.*
  - *If the final approved project does not avoid all State and federally-protected wetlands and other waters (including riparian habitat), 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 solar development area.*
- *Restricting unavoidable temporary construction and maintenance activities within wetlands/other waters (e.g., driving vehicles/equipment through jurisdictional aquatic resources) to occur during the dry season or dewatered areas that have been dry for a minimum of 15 days, 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 for the purposes other than vegetation maintenance.*
- *Restricting use of heavy equipment within wetlands/other waters within the permanent construction footprint to occur under dry conditions (e.g., during dry season or so as not to form ruts of 6 inches or more) or dewatered areas.*
- *Delineation of the work site boundaries such that no work occurs outside the defined impact footprint of the solar development area.*
- *Hardpan/Duripan Protection: to protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to result in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer once construction is complete.*
- *Restoring all temporary impacts to wetlands to pre-existing conditions.*
- *Establishing wetland avoidance buffers to the maximum extent feasible (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 (i.e., impacts after taking into account reductions in impact by mitigation measures) 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 (such as within Adjacent Other Lands within the Barton Ranch property, or other areas within the same watershed as the solar development area), 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 solar development area provide habitat to special-status species (e.g., 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.*

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

The undeveloped grasslands in the solar development area provide nursery and migratory habitat for common wildlife species, and contribute some of the few remaining blocks of natural land identified within the Sacramento Valley, concentrated at the eastern edge along the foothills (Spencer et al. 2010). Additionally, the Coyote Creek corridor in the central-southern vicinity of the solar development area and the Carson Creek corridor passing through the southeastern portion of the solar development area provide habitat movement corridors through the project site and vicinity, native habitat for resident wildlife, and important linkages between native habitat in the surrounding area, such as between the Cosumnes River-Deer Creek corridor and other

existing preserves to the south-southwest, and the foothills to the northeast and existing Deer Creek Hills preserve to the east.

While 1,412 acres of the 2,704-acre project site would be developed for the proposed project, implementation of the Agricultural Management Plan (see Mitigation Measure AG-1) would re-establish grassland conditions in and around the solar panels within the solar development area. These areas of grassland that would remain available would be expected to retain some habitat connectivity throughout the solar development area and preserve access to nursery sites for common ground dwelling species, such as some passerines, ground squirrels, amphibians, and reptiles. 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 designed to avoid development along the two main creek corridors in the project site vicinity, Carson and Coyote creeks, as well as some of their tributary drainages. As a result, project development would have limited impact on the riparian corridors surrounding the solar development area, which likely provide some of the most important local and regional habitat connections in the vicinity of the solar development area and nursery sites for aquatic, riparian, and terrestrial species, including for Swainson's hawk, western pond turtle, and potentially tricolored blackbird. Therefore, the functions along the identified Coyote Creek essential habitat connectivity area, including the Carson Creek corridor, would be maintained with project implementation. Riparian corridors along Coyote and Carson creeks will remain intact during and after project development activities; permanent developments of the project would avoid these two drainages by approximately 100 feet. Approximately 4.19 acres of riparian habitat along intermittent tributaries to these two main creek corridors would be impacted by the project (see Impact BR-2).

Proposed seven-foot-tall woven wire fencing around the solar facility portion of the solar development area may limit wildlife permeability for certain species outside of the two main creek corridors. Species such as birds, amphibians, and reptiles (e.g., snakes, lizards) would be able to pass through or over the proposed fencing and their movement through the solar development area would not likely be impeded. Medium to large sized mammals (e.g., coyote, possibly deer) would likely be excluded from the solar development area due to the tall height and likely small size of openings in the woven fencing; and their movements could be limited to outside the solar development area, along and around the fence line perimeter. Project fence line design would be expected to generally direct wildlife movement along natural drainages avoided by the project and should allow for generally unimpeded movements between natural areas around the site, with the possible exception of a few small dead-end pockets in the northern part of the solar development area. Wildlife may be encouraged to travel along Scott Road if maneuvering around the fence line in the southern and central portions of the solar development area which could expose them to greater risk of vehicle collisions in those areas. However, Scott Road does

not carry a high traffic volume[6] and agricultural fencing already exists along Scott Road in these areas, which may discourage wildlife from entering the roadway.

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 wildlife movement to less than significant, the following mitigation measure shall be implemented as part of the project.

MITIGATION MEASURES

- *Implement Mitigation Measure AG-1 (see Chapter 4, "Agricultural Resources").*
- *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 and Other Waters).*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures AG-1 (Agricultural Management Plan), BR-1e (Burrowing Owl), BR-1f (Swainson's Hawk), and BR-3 (State or Federally Protected Wetlands and Other Waters) would reduce potential project-related impacts on wildlife movement to a **less-than-significant** level because implementation of the Agricultural Management Plan would retain and/or restore grassland vegetation throughout much of the solar development area that could facilitate wildlife movement within and across the project site, and because compensation for loss of Burrowing owl habitat, Swainson's hawk foraging and nesting habitat, and protected wetlands (and other waters) would protect and retain habitat regionally that would support regionwide wildlife connectivity and grassland nursery sites.

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), General Plan Policies CO-58 to CO-62, CO-66, CO-87 to CO-92, CO-115, and CO-138 to CO-141, all identified in the Regulatory Setting Section of this chapter, are applicable to the proposed project.

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. One previously

[6] Measured 24-hour traffic volumes on Scott Road at White Rock Road (combined northbound and southbound) ranged from 2,621 to 2,860 daily vehicles during measurements taken from 2015 through 2019. No measurements are available that specify the time of day for traffic levels. However, if it assumed that 75% of this traffic happens during the hours of 6:00 a.m.–6:00 p.m., that daily traffic amounts to 1.5 cars per minute during the day (including both directions) and 0.5 cars per minute during the evening (again, including both directions).

documented by CNDDB active Swainson's hawk nest is located in and within 0.5 mile of the project site; approximately 1,098.75 acres of annual grassland and other suitable open foraging habitat for this species occur within the solar development area and could provide potential foraging habitat to Swainson's hawks in the region, of which approximately 911.10 acres would be permanently impacted by the proposed project (see Impact BR-1, Swainson's Hawk). Implementation of Mitigation Measure BR-1f would ensure that the project is consistent with the Sacramento County Swainson's Hawk Ordinance.

The Sacramento County General Plan Policies identified as applicable to the proposed project address three main topics of resource protection:

1. Policies CO-58 through CO-62 and CO-66 address mitigation standards for impacts on native habitat, including wetlands, riparian, and oak woodlands, and special-status species habitat. Consistency with these policies is demonstrated in the impact analysis and mitigation measures under Impact BR-1, Impact BR-2, and Impact BR-3 above; with the exception that consistency with the SSHCP is addressed in Impact BR-6, below.

2. Policies CO-87 through CO-92 and CO-115 address protection of riparian habitat; consistency with these policies as relevant to the proposed project is evaluated in the section below.

3. Policies CO-138 through CO-141 address the protection of native oak trees, landmark/heritage trees, riparian trees, and native oak woodlands/savannah (i.e., oak woodland/forest). Consistency of the proposed project with policies related to trees and oak woodlands is evaluated in the section below.

The project has been designed to largely avoid riparian habitat; for areas where impacts on riparian habitat cannot be avoided, the project would be required to mitigate at a ratio of 1:1 for preservation and 1:1 for establishment (see Impact BR-2). Therefore, the project would be consistent with CO-87 and CO-89 in that it would protect the majority of riparian habitat on-site. The project would be consistent with CO-91 through implementation of the measure "Prevent Invasive Species Spread" as part of Mitigation Measure BR-1a. The project would implement a minimum 100-foot avoidance buffer to the top of bank of Coyote and Carson creeks, with the exception of a few locations where roads and medium voltage overhead lines cross these creeks and several locations where the solar development area and adjacent temporary work areas extend closer than 100 feet. Trees removed from within the portions of the project footprint that are closest to Coyote and Carson creeks (i.e., where medium voltage lines cross Carson Creek) do not have canopies that overlap the creek, therefore, tree removal would not be expected to conflict with County policy CO-92. CO-115 establishes a minimum 100-foot functional setback from stream banks (prohibiting development, including agricultural) to protect vegetation and bank stability along the channel; an additional transitional setback of 50-feet beyond the function setback is also generally required to protect associated hydrology. While the proposed project generally implements a 100-foot avoidance buffer to Carson and Coyote creeks, several portions of the project footprint totaling 0.38 acre (as identified above) extend closer than 100 feet and would therefore conflict with CO-115. Project areas that occur within the additional 50-foot transitional buffer area required by CO-115 are not expected to conflict with the objective of the transitional buffer area because the project has been designed to retain on-site hydrology and drainage patterns. Therefore, without mitigation, the project would potentially conflict with Sacramento County General Plan policies related to riparian setbacks (CO-115).

The project proposes to remove 4,787 trees, a total of approximately 287 acres of oak woodland/forest, and 4.19 acres of riparian woodland/forest within the solar development area. Of trees proposed for removal, 4,394 are protected oak trees (greater than 6 inches in diameter or 10 inches aggregate diameter for multi-trunk trees measures at 4.5 feet above ground [i.e., DBH); 1,792 are heritage trees (greater than 16 inches in DBH); and 173 are riparian trees (trees within delineated sensitive riparian habitat). Furthermore, the removal of all aforementioned trees equates to the loss of 54.61 acres of contiguous canopy oak woodland and forest within the solar development area (refer to Appendix BR-1, Arborist Report). Oak woodland is scattered across the project site; however, concentrations of canopy area appear to occur at the far northern end of Coyote Creek, in the southwestern corner near the confluence of Coyote and Carson creeks, and along the eastern border. Without appropriate mitigation for the loss of protected trees and oak woodlands consistent with County policy and County approval to remove protected trees, the project would conflict with local policies protecting trees. The project would be required to implement a Tree Resource Revegetation Plan (see Mitigation Measure BR-2) that is consistent with the Sacramento County General Plan polices CO-140 and CO-141, as identified in the Draft Tree Resource Compliance and Mitigation Memorandum (Dudek 2024) and summarized below:

- The project has been designed to avoid portions of oak canopy area in each of the three oak canopy concentration areas identified within the project site, primarily along Coyote and Carson creek drainages and the project applicant would develop and implement a Tree Resource Protection and Revegetation Plan that identifies a mitigation area to replace any project-related canopy loss. As described in Mitigation Measure BR-2, on-site preservation of native oak tree canopy shall be considered as a first priority for fulfillment of this preservation mitigation requirement. For the purposes of this mitigation measure, “on-site” constitutes being within Adjacent Other Lands (Plate PD-2, Project Setting) of the project site, or immediately adjacent to the project site such that at least a portion of the boundary of the preservation area directly borders oak woodlands in the project site. On-site native oak tree canopy preservation shall preserve the main, central portions of consolidated and isolated groves constituting the existing canopy on-site, and provide an area on-site that compensates for canopy area lost. On-site preservation areas shall prioritize areas that provide connectivity between existing oak woodlands and forest and/or riparian habitat that may serve as potential wildlife movement corridors. The native oak canopy preservation area must be a single contiguous area on-site, adjacent to existing oak canopy to ensure opportunities for regeneration, and at least equal to the size of canopy area lost or else additional compensation as described in detail in Mitigation Measure BR-2 (i.e., off-site preservation, preservation bank credit purchase, or in-lieu fee to a tree preservation fund) shall be required to ensure no net loss. If on-site mitigation is not feasible, off-site preservation may be considered in entirety or in combination with on-site preservation. The off-site preservation area shall meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity. Protected woodland habitat could be used as a suitable site for establishment tree plantings (as detailed in Mitigation Measure BR-2 under item 3, “Establishment” above), if appropriate and approved by Sacramento County. The project proposed mitigation would, therefore, be consistent with CO-140, using a combination of options 2 and 6.

The Tree Resource Protection and Revegetation Plan would include a performance standard for the mitigation area of a minimum canopy coverage of 30 percent for blue oak at 15 years post-

revegetation (see Mitigation Measure BR-2, above). Therefore, as described in the Tree Resource Compliance and Mitigation Memorandum (Dudek 2024), and summarized above, the project would be consistent with Sacramento County General Plan policies CO-138 through CO-141 related to the protection of trees and oak woodlands and associated mitigation.

The project would be consistent with local policies and ordinances protecting biological resources, except the potential for project development to conflict with the Sacramento County General Plan policies protecting riparian resources (as identified above) would be considered a **potentially significant** impact. To reduce impacts related to conflicts with local policies protecting biological resources to be less than significant, the following Mitigation Measure BR-5 shall be implemented as part of the project.

Mitigation Measures

BR-5: Address Inconsistencies with Local Policies Protecting Biological Resources.

- *A minimum buffer of 100 feet shall be maintained from the top of bank of Carson Creek and Coyote Creek to protect riparian functions consistent with the Sacramento County General Plan Policy CO-115, unless a Qualified Biologist determines that a buffer of less than 100 feet will sufficiently protect riparian habitat functions. If work is planned within this 100-foot avoidance buffer, then a site-specific Aquatic and/or Riparian Resource Avoidance Plan shall be developed and implemented that includes the following:*
  - *Flagging or fencing aquatic features under the oversight of a Qualified Biologist for avoidance and to clearly identify the limits of construction.*
  - *All crews will be provided with maps showing the locations of aquatic habitats in and near the work area.*
  - *Measures to minimize erosion and runoff, or altered surface flow during construction and ongoing operations, in accordance with Mitigation Measure BR-1a (in particular Erosion Control); and implementation of BMPs and pollutant source control measures, along with preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants as identified in Impact HYD-1 (see Chapter 10, "Hydrology and Water Quality").*
  - *Worker environmental awareness training (see Mitigation Measure BIO-1b) covering relevant laws, location(s) of wetlands and other waters, including riparian habitat in the work site, and project activity-specific avoidance and minimization measures.*

Significance after Mitigation

Mitigation Measure BR-5 would resolve potential project-related inconsistencies with local policies protecting biological resources to a **less-than-significant** level because it would require an assessment of potential losses of shaded riverine aquatic habitat from project implementation and mitigation to replace any such losses to achieve the no net-loss standard and because it would require an adjustment of final project designs to implement a 100-foot avoidance buffer to Coyote and Carson creeks in compliance with applicable USACE Clean Water Section 404 permitting standards and CDFW streambed alteration agreement standards.

Impact BR-6: Conflict with the Provisions of an Adopted HCP, Natural Community Conservation Plan, or other approved Local, Regional, or State HCP

The solar development area is located within the SSHCP Plan Area, primarily (89 percent) 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. The SSHCP does not apply to the project. A small portion of the project is within the SSHCP PPU 1 (approximately 160 acres) and PPU 5 (approximately 148 acres), see discussion below. The SSHCP also acknowledges the authority to approve non-Covered Activities pursuant to the regulatory programs of USFWS, USACE, CDFW, and RWQCB. Development of non-Covered Activities within the SSCHP Plan Area, especially those outside the UDA, have potential to be inconsistent with the conservation strategy of the SSHCP, including limiting the availability of lands for accomplishing species habitat preservation under the SSHCP. Therefore, an analysis of project consistency with this aspect of the SSCHP is provided below.

The SSHCP conservation strategy is based on a set of biological goals and objectives to be accomplished through implementation of a comprehensive suite of avoidance and minimization measures (AMMs), as well as the creation of an integrated preserve system. The project would be required to implement BMPs during construction (see Mitigation Measure BR-1a) that are consistent with those described in the SSHCP and would implement species-specific mitigation measures (see Mitigation Measures BR-1b through BR-1l) that are also consistent with AMMs for Covered Species described in the SSHCP. As currently designed, the project is also consistent with the following additional applicable design measure from the SSHCP:

- LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.

Furthermore, the project would avoid, minimize, and mitigate impacts on natural resources to comply with the regulatory standards of USFWS, USACE, CDFW, and RWQCB in order to obtain applicable permits and other approvals from these environmental resource agencies. These are the same regulatory standards applied to the review and approval of the SSHCP. Therefore, the project mitigation strategy is designed to achieve the same mitigation standards applicable to Covered Activities under the SSHCP.

The project also would not interfere with establishment of an integrated preserve system under the SSHCP. This conclusion is based, in part, on Dudek's analysis of project consistency with the SSHCP (Appendix BR-1; South Sacramento Habitat Conservation Plan Consistency Analysis). The SSHCP preserve system's goal is for a new integrated preserve system totaling 36,282 acres across eight identified preserve planning units (PPUs) covering a total of 294,326 acres within the SSHCP Plan Area (Plate BR-3). The preserve system is designed to incorporate minimal smaller preserves in PPUs within the UDA (totaling 7,071 acres) and focus on more and larger preserves in PPUs outside the UDA (totaling 29,211 acres). The majority of the solar development area (1,104 acres; 78 percent) occurs outside any PPU. The SSHCP has no specific preservation goals or objectives for areas outside PPUs and did not envision land acquisition outside PPUs; therefore, project development on the majority of the solar

development area that falls outside PPUs would not conflict with implementation of the SSHCP Conservation Strategy. However, the proposed project partially overlaps PPU 1 by approximately 160 acres (all within the UDA) and PPU 5 by approximately 148 acres (all outside the UDA). While the 308 acres that would be developed by the project within PPUs 1 and 5 would not be available for acquisition and inclusion in the SSHCP preserve system for the approximately 35-year operational life of the project, Dudek's analysis demonstrates that project-related impacts on SSHCP land cover types and habitat within PPU 1 and 5 would be a very small percentage of the inventory of those lands in each respective PPU (see Table BR-15 through Table BR-18); and 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 solar development area would not be available for acquisition as part of the SSHCP preserve system during the project's 35-year lifespan of the project, the solar development area may continue to provide some habitat value for SSHCP Covered Species.
- 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 aquatic resources, special-status species, and tree resources, 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, the project would only impact (temporarily and permanently) a relatively small percentage of habitat for SSHCP Covered Species (up to 3 percent for PPU 1; less than 1 percent for PPU 5) and a smaller percentage of natural land cover types (up to 2 percent for PPU1; less than 1 percent for PPU 5) within SSCHP PPUs 1 and 5 that are available for the establishment of preserves under the SSHCP (Table BR-15 through Table BR-18). Acreages of natural land cover types and of Covered Species modeled habitat remaining available in PPUs 1 and 5 after project implementation would be more than sufficient to meet the SSHCP target of 3,756 acres of preserves in PPU 1 (3,537 acres within the UDA and 219 acres outside the UDA) and 1,691 acres of preserves within PPU 5.

Table BR-15: Potential Project-Related (Temporary and Permanent) Removal of Natural Land Cover Types Present within SSHCP Preserve Planning Unit 1

Land Cover Type	Estimated Project Impact – PPU 1 (Acres)	PPU 1 Total (Acres)	Project Percent of PPU 1	PPU 1 – Remaining After Project (Acres)	PPU 1 – Preserve Target Total (Acres)	PPU 1 – Preserve Target within UDA (Acres)	PPU 1 – Preserve Target outside UDA (Acres)
Terrestrial							
Annual Grassland	156	3,471	<1	3,315	3,471	3,267	204
Cropland/Irrigated Pasture	0	419	0	419	0	0	0
Blue Oak Woodland/Blue Oak Savannah	2	927	<1	925	0	0	0
Riparian							
Mixed Riparian Woodland/Mixed Riparian Scrub	0	0	0	0	0	0	0
Aquatic Features							
Freshwater Marsh	0	10	0	10	10	10	0
Seasonal Wetland	0	0	0	0	0	0	0
Swale	1.04	52	<1	51	52	49	3
Vernal Pool	0.41	145	<1	145	145	133	12
Open Water	0	51	0	106	51	51	0
Stream/Creek	0.01	10	<1	10	10	10	0
Stream/Creek (VPIH)	0	17	2	42	17	17	0

Source: County of Sacramento et al. 2018, adapted by AECOM in 2022.
PPU = Preserve Planning Unit
SSHCP = South Sacramento Habitat Conservation Plan
UDA = Urban Development Area
VPIH = Vernal Pool Invertebrate Habitat.

Table BR-16: 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 – PPU 5 (Acres)	PPU 5 Total (Acres)	Project Percent of PPU 5	PPU 5 – Remaining After Project (Acres)	PPU 5 – Preserve Target (Acres)
Terrestrial					
Annual Grassland	129	27,463	<1	27,334	750
Cropland/Irrigated Pasture	0	2,462	0	2,462	388
Blue Oak Woodland/Blue Oak Savannah	19	6,556	<1	6,537	0
Riparian					
Mixed Riparian Woodland/Mixed Riparian Scrub	0	1,401	0	1,401	440
Aquatic Features					
Freshwater Marsh	0	159	0	159	0
Seasonal Wetland	0	446	0	446	31
Swale	<1	89	<1	89	8
Vernal Pool	0	339	0	339	35
Open Water	0	365	0	365	6
Stream/Creek	0.41	481	<1	481	33

Source: County of Sacramento et al. 2018, adapted by AECOM in 2024.
PPU = Preserve Planning Unit
SSHCP = South Sacramento Habitat Conservation Plan

Table BR-17: Potential Project-Related Removal of Covered Species Modeled Habitat Present within SSHCP PPU 1

Land Cover Type	Estimated Project Impact – PPU 1 (Acres)	PPU 1 Total (Acres)	Project Percent of PPU 1
Wildlife			
Western spadefoot (Upland)	156	14,840	1
Western spadefoot (Aquatic)	1	799	<1
Northwestern pond turtle (Upland)	135	3,975	3
Northwestern pond turtle (Aquatic)	0	67	0
Burrowing owl (nesting/foraging)	156	15,265	1
Burrowing owl (foraging)	0	692	0
Swainson's hawk (nesting)	0	5	0
Swainson's hawk (foraging)	157	15,918	1
Tricolored blackbird (nesting/foraging)	156	15,293	1
Tricolored blackbird (foraging)	1	736	<1
Valley elderberry longhorn beetle	1	886	<1
Vernal pool tadpole shrimp/vernal pool fairy shrimp[1]	157	15,404	1
American badger	159	17,842	1
White-tailed kite (nesting/foraging)	158	19,147	1
Plants			
Dwarf downingia	9	979	1
Boggs Lake hedge hyssop	64	20,782	<1
Ahart's dwarf rush	21	9,792	<1
Legenere	21	11,623	<1
Pincushion navarretia	97	11,245	1
Slender Orcutt grass and Sacramento Orcutt grass	27	10,012	<1
Sanford's arrowhead	0	57	0

Source: Appendix BR-5, adapted by AECOM in 2024.
Notes:
[1] Estimated project impact and acres of habitat available in PPU 1 are likely grossly overestimated because suitable habitat modeled for this species includes all annual grassland mapped within the solar development area, whereas this species is restricted to seasonal aquatic habitats within annual grassland which are typically more limited.
PPU = Preserve Planning Unit
SSHCP = South Sacramento Habitat Conservation Plan

Table BR-18: Potential Project-Related Removal of Covered Species Modeled Habitat Present within SSHCP PPU 5

Land Cover Type	Estimated Project Impact – PPU 5 (Acres)	PPU 5 Total (Acres)	Project Percent of PPU 5
Western spadefoot (Upland)	148	34,019	<1
Western spadefoot (Aquatic)	0	1,381	0
Northwestern pond turtle (Upland)	148	29,256	<1
Northwestern pond turtle (Aquatic)	0	807	0
Burrowing owl (nesting/foraging)	129	32,907	<1
Burrowing owl (foraging)	0	874	0
Swainson's hawk (nesting)	0	1,342	0
Swainson's hawk (foraging)	129	32,129	<1
Tricolored blackbird (nesting/foraging)	129	30,617	<1
Tricolored blackbird (foraging)	0	2,996	0
Valley elderberry longhorn beetle	0	2,743	0
Vernal pool tadpole shrimp/vernal pool fairy shrimp[1]	0	13,456	0
American badger	129	29,097	<1
White-tailed kite (nesting/foraging)	148	40,012	<1
Plants			
Dwarf downingia	0	2,423	0
Boggs Lake hedge hyssop	0	4,715	0
Ahart's dwarf rush	0	1,915	0
Legenere	0	4,244	0
Pincushion navarretia	0	5,113	0
Slender Orcutt grass and Sacramento Orcutt grass	0	2,213	0
Sanford's arrowhead	0	6,710	0

Source: Appendix BR-5, adapted by AECOM in 2024.
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 solar development area, whereas this species is restricted to seasonal aquatic habitats within annual grassland which are typically more limited.
PPU = Preserve Planning Unit
SSHCP = South Sacramento Habitat Conservation Plan

The SSHCP preserve design focus in PPU 1 includes establishing a core preserve (C-1), several smaller minor and satellite preserves, and providing linkage preserves between both existing preserves and SSHCP developed preserves; the majority of the preserve system in PPU 1 is to be developed southwest of, and outside of the proposed project site and vicinity, with the exception of Linkage Preserve L-1, Carson Creek Linkage, which is intended to connect core preserve C-1 (southwest of the project site) to undeveloped lands east of the UDA where the project site is located (see Plate BR-3). The proposed project would retain an approximately 100-foot buffer, and in many cases larger buffer, to Coyote and Carson creeks that would allow for wildlife movement and habitat connectivity between undeveloped areas west and southwest of the project site to undeveloped lands east of the UDA, meeting the goals of Linkage Preserve L-1. Therefore, the proposed project would not interfere with meeting the preserve system goals of PPU 1.

The design focus of PPU 5 is primarily to provide habitat linkages among existing and future 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 and remaining preserves will connect the Laguna Creek Wildlife Movement Corridor Preserve from the northwest in PPU 3 to the Cosumnes River/Deer Creek Wildlife Movement Corridor. The proposed project would not affect the Cosumnes River/Deer Creek Wildlife Movement Corridor or its connections to the Laguna Creek Movement Corridor (see Plate BR-3) because it is not located within or between either of these two movement corridors, and would therefore not interfere with the establishment of preserves within PPU 5.

In summary, the project is consistent with provisions of the SSHCP because it includes mitigation measures that are consistent with all relevant general and Covered Species AMMs from the SSHCP; 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; because the preserve system targeted within PPU 5 would not be impacted by the proposed project (project site is northeast and away from areas to be preserved in PPU 5); because the preserve system targeted within PPU 1 would be largely avoided by project development (except for Linkage Preserve L-1) and project design would retain movement corridors along Coyote and Carson creeks that would connect undeveloped areas west of the project site (within PPU 1) to undeveloped lands east of the UDA, meeting the goals of Linkage Preserve L-1. Furthermore, the solar development area would be decommissioned after the project's 35-year lifespan and may 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.**

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). In addition, another comment in response to the Notice of Preparation recommended that the analysis consider the loss of carbon sequestration related to the removal of trees during construction activities.

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 (e.g., 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 2023).

Global surface temperature has increased by approximately 1.1 degrees Celsius (°C) over the last 140 years (IPCC 2023); the likely total human-caused global surface temperature increase is 1.07°C. The rate of increase in global average surface temperature has not been consistent; the last five decades have warmed at a much faster rate per decade (IPCC 2023).

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 2023).

Principal Greenhouse Gases and Sources

GHGs are present in the atmosphere naturally, are released by both natural and anthropogenic 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 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

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 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 2023 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 2023).

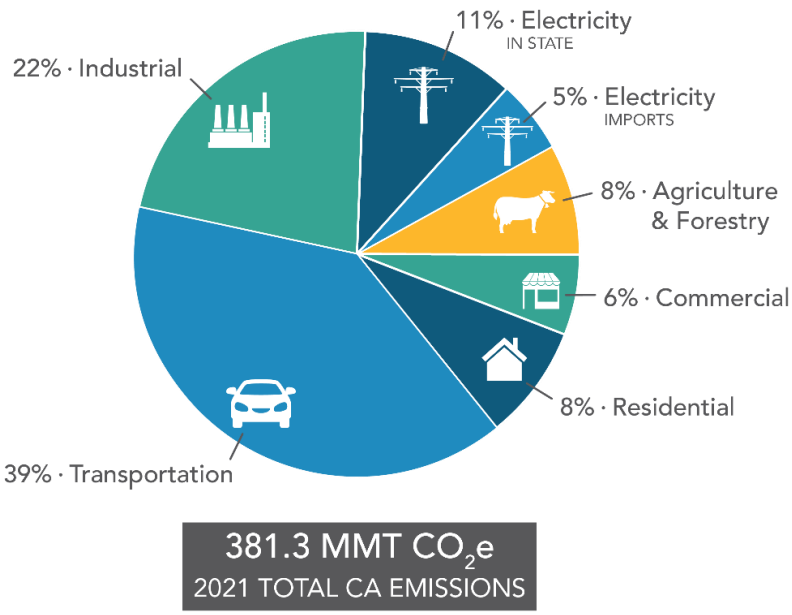
Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. As noted in the Sacramento Valley Regional Report of the California's Fourth Climate Change Assessment (Houlton and Lund 2018), 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 CAP) (County of Sacramento 2017a). 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 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 California Air Resources Board (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, 381.3 million MT CO_2e were generated in 2021. The transportation sector represents the single largest source of California's GHG emissions in 2021, accounting for 39 percent of total GHG emissions. Transportation was followed by industrial sources, which accounted for 22 percent, and then by the electricity sector (in-state sources and imported electricity), which accounted for 16 percent of total GHG emissions (CARB 2023).

Plate CC-1: 2021 California Greenhouse Gas Emissions Inventory by Sector

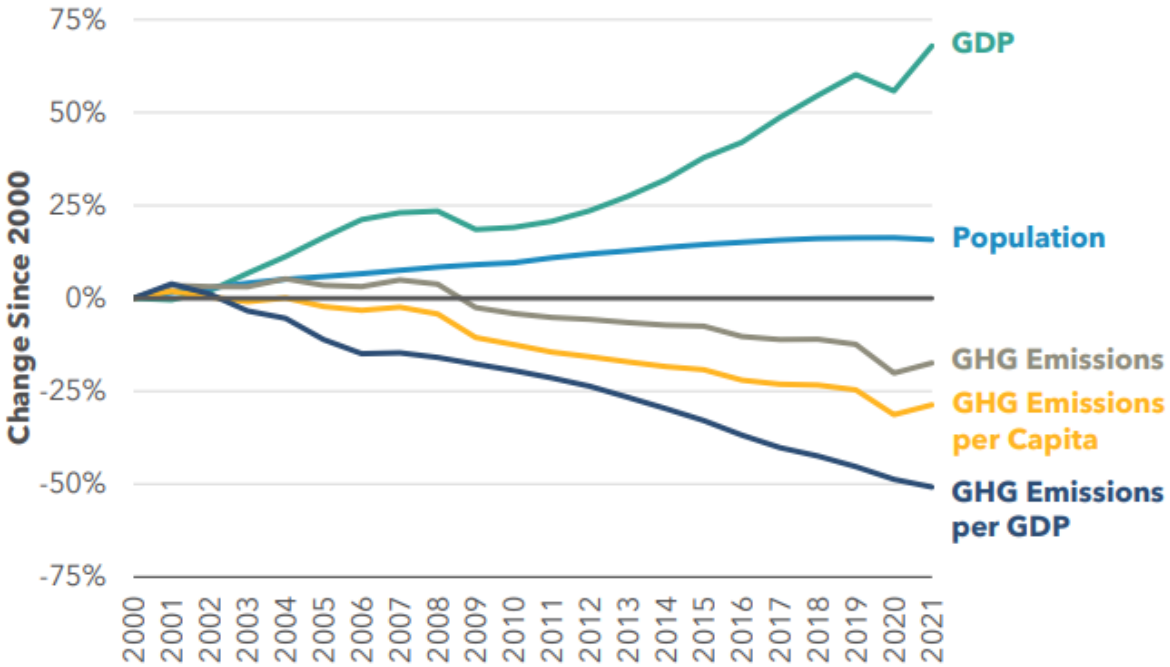


Source: CARB 2023

California has implemented several programs and regulatory measures to reduce GHG emissions. Plate CC-2: demonstrates California's progress in reducing statewide GHG emissions. Since 2007, California's GHG emissions have been declining, with the exception of 2021[1], even as population and gross domestic product have increased. Per-capita GHG emissions in 2021 were 30 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 51 percent since the peak in 2001.

[1] Both the 2019 to 2020 decrease and the 2020 to 2021 increase in emissions are likely due in large part to the impacts of the COVID-19 pandemic. Emissions levels in 2020 are anomalous to the long-term trend, and the one-year increase from 2020 to 2021 should be considered in the broader context of the pandemic and subsequent economic recovery that took place over 2021 (CARB 2023).

Plate CC-2: Trends in California Greenhouse Gas Emissions (Years 2000 to 2021)



Source: CARB 2023

Local Greenhouse Gas Emissions Inventory

As part of the Sacramento County Climate Action Plan (CAP), the County established a baseline and forecasted GHG emissions inventory for the community and government operations. The total community-wide GHG emissions in the 2015 baseline year were 4,173,426 MT CO_2e; while the forecasted GHG emissions for 2030 are 3,309,712 MT CO_2e (County of Sacramento 2024a, 2022). The County updated the GHG emissions inventory in 2024 for the year 2021, and in this community-wide inventory, the total was 4,159,556 MT CO_2e (County of Sacramento 2024a). As with the state as a whole, transportation is the top source of GHG emissions for Sacramento County with 43 percent of the total, followed by building energy with 36 percent.

Regulatory Setting

While most do not directly inform proposed project implementation or impact determination, 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—CO_2, CH_4, N_2O, HFCs, PFCs, and 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 (EO) S-3-05, issued in 2005 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.

Assembly Bill 32 and the State Climate Change Scoping Plan

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [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.

CARB is required to update the Scoping Plan at least once every five years to evaluate progress and develop future inventories that may guide this process. The *First Update to the Climate Change Scoping Plan: Building on the Framework* (2014 Scoping Plan Update) determined that the state was on schedule to achieve the 2020 target. However, an accelerated reduction in GHG emissions would be required to achieve the EO S-3-05 emissions reduction target for 2050.

In November 2017, CARB released its second update to the Scoping Plan, *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target* (2017 Scoping Plan Update) (CARB 2017). The 2030 target of a 40 percent reduction in GHG emissions below 1990 statewide GHG emissions (consistent with EO B-30-15, which is outlined below) guides the 2017 Scoping Plan Update (CARB 2017). The 2017 Scoping Plan Update establishes a plan of action, consisting of a variety of strategies to be implemented rather than a single solution, for California to reduce statewide emissions by 40 percent by 2030 compared to 1990 levels (CARB 2017).

In December 2022, CARB approved the third update to the Scoping Plan Update, *2022 Scoping Plan for Achieving Carbon Neutrality*, which evaluates progress toward the 2030 target, as well as examining scenarios that could achieve carbon neutrality by 2045 or sooner (CARB 2022). The 2022 Scoping Plan Update focuses on actions needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives. The 2022 Scoping Plan includes strategies to increase clean energy sources, including the addition of utility scale solar energy generation and storage (CARB 2022).

Executive Order B-30-15, Senate Bill 32, and Assembly Bill 197

EO B-30-15, signed in 2015, established a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. This emission reduction goal serves as an interim goal between the AB 32 target to achieve 1990 emission levels by 2020 and the long-term goal set by EO S-3-05 to reduce statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligned California's 2030 GHG reduction goal with the European Union's 2030 reduction target that was adopted in October 2014.

Senate Bill (SB) 32 signed into law the emissions goal of EO B-30-15, extending the provisions of AB 32 from 2020 to 2030 with the target of 40 percent below 1990 levels by 2030. The companion bill to SB 32, AB 197, provides additional direction to CARB on adoption of strategies to reduce GHG emissions.

Executive Order B-55-18 and Assembly Bill 1279

EO B-55-18, signed in 2018, 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 reducing GHG emissions.

AB 1279, the California Climate Crisis Act, was signed September 16, 2022, codifying EO B-55-18. This bill declares the policy of the state both to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and achieve and maintain net negative greenhouse gas emissions thereafter. It requires statewide anthropogenic greenhouse gas emissions be reduced to at least 85 percent below 1990 levels by 2045.

Executive Order N-19-19

EO N-19-19, signed in September 2019, directs the California Department of Finance to create a Climate Investment Framework that shifts investments into sectors that have more growth potential as a result of their focus on carbon reduction and climate resiliency. This Executive Order also directs the State Transportation Agency to align transportation spending with the State's Climate Change Scoping Plan, including directing investments to support housing production near available jobs and directs CARB to take actions that would encourage manufacturers to produce clean vehicles, increase demand for electric vehicles, and achieve needed reductions from the transportation sector.

Senate Bill 1078 (2002), Senate Bill 350 (2015), 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. SB 350 was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. SB 350 extended the RPS target by requiring retail sellers to procure 50 percent of their electricity from renewable energy sources by 2030. 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 Metropolitan Air Quality Management District

SMAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in Sacramento County. In the *Guide to Air Quality Assessment* (2021), SMAQMD includes a GHG chapter that discusses the recommended approach to evaluating GHG emissions. SMAQMD states that GHG emissions should first be evaluated and addressed on a program level, if possible. In April 2020, SMAQMD adopted updated GHG thresholds of significance for land use development project operational emissions to assist lead agencies in determining significance for proposed projects during CEQA review. The thresholds include showing consistency with the 2017 Climate Change Scoping Plan. SMAQMD also includes a list of analysis expectations and methodologies for CEQA analyses. The SMAQMD guidance is discussed further in the “Thresholds of Significance” subsection below.

Sacramento County Climate Action Plan

The Sacramento County Board of Supervisors adopted a CAP on November 6, 2024. The CAP is intended to provide consistency with CARB’s 2022 Climate Change Scoping Plan and AB 1279 (County of Sacramento 2024b). The CAP details specific measures that will be implemented in the County by 2030 to reduce GHG emissions from communitywide activities and government operations. It also includes an adaptation plan that recommends actions to reduce the community’s vulnerability to the anticipated impacts of climate change. The CAP has been developed in the context of the County General Plan’s goals, objectives, and policies, and in response to the County’s adoption of a Climate Emergency Resolution in December 2020 and State legislation including AB 32, SB 32, and SB 743 as well as EOs S-3-05 and B-55-18. The strategies and measures contained in the 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.

Sacramento County General Plan

The "Energy" Element of the County of Sacramento General Plan (County of Sacramento 2017b) includes the goal 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 objective and policies that are applicable to the project:

> To increase the amount of energy from wind, falling water, and geothermal sources, it is the policy of Sacramento County to:
>
> - **Policy EN-19.** Support the development and use of renewable sources of energy, including but not limited to biomass, solar, wind, and geothermal.

The "Public Facilities" Element of the General Plan (County of Sacramento 2019) includes additional goals and policies that apply to the project and are related to the siting of energy facilities to protect biological and cultural resources and human health and to promote the goals of the Air Quality and Energy Elements through support of alternative energy technologies that provide relatively clean, safe electricity.

Sacramento Municipal Utility District 2030 Net Zero GHG Emissions Plan

SMUD's 2030 Zero Carbon Plan (SMUD 2021a) describes SMUD's goal of eliminating all carbon emissions from its power supply as soon as possible, but no later than 2030. To meet the standards in the Zero Carbon Plan, one of the four main areas of focus is implementing proven clean technologies, including utility-scale solar. The Zero Net Carbon Plan states that solar energy has the largest potential for resource development, is the lowest cost proven clean technology available, and has potential for local development (SMUD 2021a). A basic objective of the proposed Project is to generate and supply renewable solar electric energy, which would assist SMUD in achieving its goal of zero carbon emissions in its power supply by 2030.

The SMUD 2021 Board Monitoring Report (SMUD 2021b) determined it must procure renewable energy resources to meet or exceed the state's mandate of 33% of SMUD's retail sales by 2020, 44% by 2024, 52% by 2027, and 60% of its retail sales by 2030 and thereafter (SMUD 2021b).

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.

Addressing GHG emissions impacts requires an agency to make a determination as to what constitutes a significant impact. 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.

In April 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). In developing the thresholds, the SMAQMD developed the thresholds for Sacramento County 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 2020a). 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 (BMP1). Tier 1 Best Management Practices requires that projects be designed and constructed without natural gas infrastructure (BMP1), and that projects meet the current California Green Building Standards (CALGreen) Tier 2 standards and that all electric vehicle (EV) capable spaces shall instead be EV ready (BMP2). Since the proposed project's land use development type is not included in the SMAQMD operational screening level table, the analysis presented in this Chapter includes an estimate of 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, operational emissions of GHGs would be emitted from solid waste and water sources and from the use of SF_6. Solid waste disposal, including packaging materials from operations, would result in GHG emissions due to landfill off-gassing. Activities associated with supplying, conveying, treating, and distributing water for the project would result in indirect GHG emissions. Solid waste and water source GHG emissions were estimated in California Emissions Estimator Model (CalEEMod). Potential GHG emissions (in MT CO_2e) of SF_6, which is a high-GWP GHG, that could result from annual project operations were estimated based on the estimated SF_6 requirement and a maximum fugitive emissions rate of one percent based on current California Code of Regulations (CCR) Title 17 CCR Sections 95350 et seq., and a GWP of 22,800 for SF_6 compared to CO_2. The analysis also considered the reduction in carbon sequestration capacity of the project site that would result from removal of trees on site during construction and the gain of carbon sequestration capacity that would result from the subsequent planting of new trees. Additionally, the analysis 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

One of the Project Objectives for the proposed project is to provide support for the attainment of the SMUD 2030 Zero Net Carbon Plan target, which aims to reach zero

carbon emissions in the SMUD power supply by 2030. As a solar energy generating facility, the proposed project would generate electricity from a GHG-free source and operational GHG emissions would be limited. 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 7,320 MT CO_2e over the 18-month construction period and would exceed the SMAQMD construction-related threshold of 1,100 MT CO_2e per year. Decommissioning activities would generate approximately 1,853 MT CO_2e over the one-year decommissioning period and would also exceed the SMAQMD threshold of 1,100 MT CO_2e per year. This impact for construction would be potentially cumulatively considerable.

Additionally, the analysis contained in Appendix AQ-1 quantified the one-time change in carbon sequestration capacity due to the removal of trees onsite during construction. While sources have documented that harvested trees retain their stored carbon unless the wood decays or burns (WFPA 2023), the analysis conservatively used iTree to calculate the amount of CO_2 sequestered (i.e., stored) by the trees proposed to be removed during project construction. It is estimated that 26,949 MT CO_2e of carbon sequestration capacity would be lost by the removal of trees during project construction (Dudek 2025). However, as discussed in “Operation” below, a portion of the carbon sequestration capacity of the project site would be restored by new tree planting.

Operation

After construction, the proposed project would require minor operations and maintenance activities that would typically include up to 10 trips per day, but an additional 32 trips were also included to account for water being trucked in for panel washing and sheep/goat grazing activity (which would not occur daily at the site), for a conservative maximum total of 42 daily vehicle trips (Appendix AQ-1). 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 from operations and maintenance activities would be approximately 407 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 less than presented here.

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.

The proposed project would not include any natural gas infrastructure, and would therefore, be consistent with SMAQMD BMP1. 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 BMP2 (EV ready parking spaces). would not be applicable. Therefore, this impact for operations would be less than cumulatively considerable.

Table CC-1: Proposed Project Operational GHG Emission in the First Operational Year

Proposed Project Operational Emissions Source	Total GHG Emissions (MT CO_2e per year)
Area[1]	29.49
Energy	201.83
Mobile	47.24
Stationary	76.43
Waste	4.73
Water	0.41
Total Annual Emissions	**360.13**
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.

Additionally, the planting of new trees as part of the proposed landscape plan would increase the carbon sequestration capacity of the project site, offsetting approximately 984 MT CO_2e in the first operational year. Throughout the lifespan of the project (assuming an active growing period of 30 years), carbon sequestration capacity would be gained by planting new trees (Dudek 2025).

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 200-megawatt capacity was estimated to generate approximately 520,000 megawatt hours per year. As detailed in Appendix AQ-1, SMUD's most recently published GHG emissions intensity factor of 295 pounds of CO_2e per megawatt-hour for the year 2025 was used to calculate the proposed project's net emissions benefit for an initial operational year of 2025, 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 2025 calendar year, the project would provide a potential offset of up to 69,798 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 for reducing GHG emissions. The development of renewable energy sources, such as the proposed project, are a necessity to meet the State RPS requirements, realizing a 100 percent renewable energy power mix, and achieving overall state GHG emissions reduction targets, SMUD's 2030 Net Zero goal, and goals and measures in the County's CAP.

Mitigation Measures

Although the project's construction- and decommissioning-related GHG emissions and potential loss in carbon sequestration 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.

CC-1: Implement Construction GHG Emission Best Management Practices during Construction Activities.

- Improve fuel efficiency from construction equipment by:
    - Minimizing 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 CCR]). Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintaining 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.
- Training equipment operators in proper use of equipment.
- Using the proper size of equipment for the job.
- Using 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 69,798 MT CO_2e in the first year of operation, which would offset the project's construction and decommissioning GHG emissions, as well as potential loss in carbon sequestration capacity, this impact would be **less than cumulatively considerable**. Implementation of 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 the RPS 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 RPS's target of 60 percent by 2030 set by SB 100 and help the state reach its mandate to be carbon neutral by 2045, assist SMUD in achieving the 2030 Net Zero goal, as well as contribute toward the 2022 Scoping Plan Update, County's General Plan, and 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. The project is also consistent with the policy focus areas and measures included in the CAP, such as decarbonizing the energy supply and supporting the SMUD Zero Carbon Plan (Measure GHG-03). In addition, the proposed project would be required to comply with all current and future regulations, including CCR 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. Building construction and design would be required to 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 Coyote Creek Agrivoltaic Ranch project (project) area, identifies and analyzes impacts related to cultural resources and paleontological resources from implementation of the project, and recommends mitigation measures to reduce or eliminate significant impacts. Tribal cultural resources (TCRs) are separate and distinct from cultural resources, and are discussed separately in Chapter 13, "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 is based on, and contains portions of, the *Built Environment Inventory and Evaluation Report for the Coyote Creek Agrivoltaic Ranch Project, Sacramento County, California*, dated February 2024, prepared by ECORP Consulting, Inc. (ECORP) (ECORP 2024), and the *Archaeological Resources Inventory Report for the Coyote Creek Agrivoltaic Ranch Project, Sacramento County, California*, dated February 2024, prepared by Dudek (Dudek 2024a). These reports contain confidential information regarding the location of archaeological resources. Historical, archaeological, and paleontological resources are nonrenewable resources. In accordance with state and federal law, and to deter vandalism, artifact hunting, and other activities that can damage such resources, these studies are confidential and are, therefore, not included as appendices to the EIR. 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 project site is generally south of U.S. Route 50, northwest of Rancho Murrieta, southeast of the Prairie City State Vehicular Recreation Area (SVRA), and south of White Rock Road in the Cosumnes community in unincorporated Sacramento County, California. Specifically, the project site is on what is known as the "Barton Ranch", adjacent to 3830 Scott Road, in a rural setting and is surrounded primarily by agricultural parcels. A majority of the project site consists of non-irrigated open space pasture. The project site is intersected by Coyote Creek, Carson Creek, and Little Deer Creek such that a portion of the project site consists of riparian areas. Several structures are present in the center of the project site, most obviously the ranch home and outbuildings associated with Barton Ranch. The northwestern portion of the project site intersects the Prairie City SVRA.

The region surrounding the project site would have been near the nexus of Plains Miwok and Nisenan tribal territories. Tribal participants in this project include the United Auburn

Indian Community (UAIC), Ione Band of Miwok Indians (IBMI), Shingle Springs Band of Miwok Indians (SSBMI), and Wilton Rancheria (WR). See Chapter 13, “Tribal Cultural Resources,” for additional information.

Precontact Setting

The following text has been extracted from the *Archaeological Resources Inventory Report for the Coyote Creek Agrivoltaic Ranch Project*, prepared by Dudek in February 2024 (Dudek 2024a).

The Paleo-Indian Period (11,550-8550 cal BC)

Occupation of the Central Valley and Sierra Foothills is likely to have occurred at least 9,000 years ago, but only a handful of Paleoindian period lithic bifacial points have been recorded. The nearest of these fluted points were found in the Sierra Valley (west of Reno, Nevada) (Foster and Betts 1996), Ebbett’s Pass (south of Lake Tahoe) (Dillon 2002), and at the Sailor Flat site (in the Tahoe National Forest). Fluted points from this area have generally been recorded as isolated finds or recovered from contexts of mixed provenience. The primary examples of the Paleoindian pattern, to which such fluted and stemmed points are generally assigned, have been recorded east of the Sierra Nevada. The typical assemblage includes large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools. Some of the most pertinent of such sites were studied by Emma Lou Davis (Davis 1978) on China Lake Naval Air Weapons Station, near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multi-component fluted point site—and MNO-680—a single-component Great Basined Stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, ground stone tools were rare, but finely made projectile points were common. Fluted points and other Paleoindian period sites are particularly rare in the Central Valley due to the dearth of Late Pleistocene–age surficial deposits in the region because of periodic episodes of erosion and deposition during the Holocene that have removed or deeply buried large segments of the Late Pleistocene landscape that would contain Paleoindian sites; although fluted points have been found in isolated contexts in the Sacramento and San Joaquin Valleys.

Archaic Period (8550 cal BC–cal AD 1100)

The Archaic period in the Central Valley is subdivided into three phases: the Lower Archaic (8550–5550 cal BC), the Middle Archaic (5550–550 cal BC), and the Upper Archaic (550 cal BC–cal AD 1100). As with the Paleoindian period, Lower Archaic deposits in the Central Valley tend to be isolated finds lacking stratigraphic context. Stemmed projectile points, flaked stone crescents, and other distinctive flaked stone artifact types are associated with this period, several of which have been found in the vicinity of Tulare Lake (Fenenga 1992).

The onset of the Middle Archaic in Central California marked a substantial change in the climate, with warmer, dryer conditions resulting in the shrinking and eventual drying out

of Tulare Lake, a phenomenon common among other Pleistocene lakes throughout the western United States during this time. This also coincided with the formation of new wetland habitats as rising sea levels pushed inland, forming the Sacramento and San Joaquin deltas. These climatic processes resulted in substantially more stable landforms as fans and floodplains stabilized within the delta, making buried Middle Archaic deposits much more common than those from the Early Archaic. Middle Archaic sites are typified by the distinct adaptive pattern of logistically organized subsistence practices and residential stability along river corridors (Rosenthal et al. 2007). The prevalence of ground stone tools, including early examples of mortars and pestles, suggests an increased reliance on vegetal resources, likely the result of greater residential stability driving resource intensification (e.g., Basgall 1987). Fishing was also an important component of subsistence, as new fishing technologies (including gorge hooks, composite bone hooks, and spears) along with abundant ichthyofaunal remains have been identified at Middle Archaic sites in Contra Costa, Sacramento, and San Joaquin Counties (Heizer 1949; Rosenthal et al. 2007). Regional variations of the Middle Archaic pattern include the Windmiller Pattern, first identified on old levee ridges at the confluence of the Mokelumne and Cosumnes Rivers. The transition to the Upper Archaic period coincides with the onset of late Holocene environmental conditions, during which time the climate was markedly cooler, wetter, and more stable.

The archaeological record from the Upper Archaic is better understood and represented and is marked by an increase in cultural diversity, with numerous regional distinctions in burial posture, artifact styles, and other elements of material culture (Bennyhoff and Fredrickson 1994; Rosenthal et al. 2007). The Upper Archaic record is marked by the development and proliferation of numerous bone tools and implements, as well as widespread production and trade of manufactured goods, including Olivella shell beads, Haliotis ornaments, and obsidian bifacial roughouts and ceremonial blades (Bennyhoff and Fredrickson 1994; Moratto 1984). Subsistence economies during the Upper Archaic focused on seasonally structured resources that could be harvested and processed in bulk, including acorns, salmon, shellfish, deer, and rabbits. The proliferation of mortars and pestles and archaeobotanical remains indicate that the first widespread reliance on acorns occurred during this period (Wohlgemuth 1996). Large, mounded village sites also first occurred in the delta region during this period (Bennyhoff and Fredrickson 1994; Rosenthal et al. 2007).

On the whole, the Archaic period in the Central Valley is characterized by increasing residential stability, cultural diversity, and subsistence intensification though time.

The Emergent Period (cal AD 1100–Historic Contact)

The archaeological record for the Emergent period is the most substantial and well-documented of any period in the Central Valley, and the assemblages and adaptations represented therein are the most diverse. The Emergent period also marks the onset of cultural traditions consistent with those documented at European contact and the disappearance of several previous archaeological traditions. Large villages developed in areas of the Sacramento Valley, and the number of mound villages and smaller hamlets increased across the region. Subsistence economies during the Emergent period were

increasingly reliant on fishing and plant gathering, with increased subsistence intensification evident in the increased reliance on small seeds and a more diverse assortment of mammals and birds (Broughton 1994; Rosenthal et al. 2007). Perhaps the most notable technological change during the Emergent period is the introduction of the bow and arrow, which replaced atlatl technology as the favored hunting implement sometime between AD 1100 and AD 1300 (Bennyhoff and Fredrickson 1994). The material record during the Emergent period is also marked by the introduction of new Olivella bead and Haliotis ornament types, and eventually the introduction of clamshell disk beads (Groza 2011; Moratto 1984; Rosenthal et al. 2007). The Emergent period in general is marked by an increase in population size and the number of residential sites and villages throughout the region, with increasing regional variability and resource intensification.

Ethnohistoric Setting

The following text has been extracted from the *Archaeological Resources Inventory Report for the Coyote Creek Agrivoltaic Ranch Project,* prepared by Dudek in February 2024 (Dudek 2024a).

The region surrounding the project site would have been near the nexus of Plains Miwok and Nisenan tribal territories during the Ethnohistoric period (Barrett 1908; Barrett and Gifford 1933; Bennyhoff 1977; Kroeber 1925, Wilson and Towne 1978). The Plains Miwok 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. Nisenan speaking groups inhabited the Yuba, Bear, and American River watersheds, extending from the Sierra Nevada summit to the Sacramento River. The nearest ethnographically documented group was the Walltown Nisenan, who lived in a village near Walltown, approximately two miles east of the project site (Payen 1961).

For both Nisenan and Plains Miwok groups, lower-elevation habitation areas in the valley were most commonly situated along rivers, often on natural levees, while Nisenan habitation areas in the foothills were most commonly situated near primary drainages and along ridgelines with mild slopes and south-facing exposures (Wilson and Towne 1978). Traditional village features included bedrock milling stations, acorn granaries, conical house structures, and sweat and ceremonial houses. The indigenous subsistence strategy was centered on fishing, hunting, and collecting vegetative resources. Groups were logistically mobile, with larger central habitation areas surrounded by satellite sites used during hunting excursions and for pre-processing of collected plant resources, such as acorns. Common food items included acorns, small seeds, pine nuts, fish, deer, rabbits, birds, bears, 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 hand stones. In the valley, mortars for processing acorns and seeds were occasionally made from wood due to the dearth of suitable tool stone (Bennyhoff 1977). A number of goods were made using fibrous plants, including canoes constructed from tule balsa or logs. Imported items included shell ornaments and beads (particularly disk beads as a

monetary unit), green pigment, tobacco, steatite items, and obsidian (Barrett and Gifford 1933; Levy 1978). Exported items included bows and arrows, animal skins, pine nuts, and other local resources (Kroeber 1925).

Among Nisenan, the dead were typically cremated and buried within the boundaries of the habitation area or village (Payen 1961) or sometimes within dedicated cemeteries (Beals 1933). In both cases there was a preference to be buried near one's relatives, such that people dying away from their natal villages were brought back prior to cremation if nearby, or else were cremated and the ashes were brought back and buried (Beals 1933). Among the Plains Miwok, burial practices varied, with flexed burial being the most common practice; however, primary cremation was occasionally practiced by wealthier families (Bennyhoff 1977). Among both groups, it was common to burn, bury, or otherwise destroy the personal property of the deceased.

The basic social unit of the Plains Miwok was the patrilineal extended family with preferred patrilocal residence (Bennyhoff 1977). These units were grouped into larger moieties (Bennyhoff 1977; Levy 1978). The largest political unit was the tribelet, defined by Kroeber (1925) as a group characterized by a sense of cohesion, local autonomy, and use and ownership of a certain territory. Plains Miwok tribelet areas could be represented by a single village or a primary village with up to six smaller and subsidiary settlements. The tribelet took its name from the tribelet center, which represented the natal village of the hereditary headman or "chief" of the unit, and which was the site of the principal assembly house used for ceremonial dances (Bennyhoff 1977). Ethnographic and mission records have identified 28 independent Plains Miwok tribelets, 8 of which occupied territories along the Cosumnes River (Bennyhoff 1977; Levy 1978). Although tribelets were autonomous, they would join together to occasionally form larger cooperative groups.

The prevalent political unit among the Nisenan was the community group, which generally consisted of a number of settlements or villages under one or two chiefs, and which owned a defined territory (Beals 1933), an organization generally consistent with description as a tribelet. In the foothills, the community group was named after the principal village, although group or unit names were not universally employed (Beals 1933). Individual villages or settlements within the community were generally composed of patrilineally related individuals who acted in unison with the other groups of the community except in minor matters. In the vicinity of the project site, among the Walltown Nisenan, the chiefs' sphere of influence was smaller, extending over a single village (Payen 1961). In either case, the chiefs possessed little direct authority but had a greater or lesser degree of influence over the community, depending on their support by public opinion (Beals 1933). The primary function of the chiefs was to direct groups in hunting expeditions, ceremonies, and warfare (Payen 1961).

Central California indigenous populations derived their linguistic roots from a common Penutian stock. The degree of internal variation among the three decedent language groups (Yokutian, Maiduan, and Wintuan) is similar to Indo-European, suggesting a time depth of approximately 6,500 years (Golla 2007). The language spoken by the Plains Miwok is one of the five classified languages of the Miwok family, a branch of the

Yokutian stock, with several distinct regional dialects. The language falls into two distinct branches: Western Miwok, which is subdivided into Coast and Lake Miwok, and Eastern Miwok, which includes Bay, Plains, and Sierra Miwok. Lexostatistical calculations suggest that the two branches of the Miwok language began to diverge at approximately 500 BC (Golla 2011). Plains Miwok is a distinct language that is quite different from adjoining Sierra Miwok vocabulary. Meanwhile, Nisenan is one of four closely related Maiduan languages, along with Konkow, Chico Maidu, and Mountain Maidu. Distinct dialects of Nisenan include Valley, Northern Hill, Central Hill, and Southern Hill Nisenan. The Maiduan language structure suggests that all four Maiduan languages were descended from the same proto-Maiduan speaking population to the north, which subsequently branched into distinct languages and dialects as populations spread southward, with the Nisenan encroaching into areas previously occupied by Miwok tribal groups sometime in the past few centuries (Golla 2007). This later population movement is further substantiated by the high frequency of Miwok loan words found within Nisenan vocabulary, a trait that is not shared with the other three Maiduan languages. The frequency of loan words is indicative not only of the timing of the arrival of the Nisenan language to the area, but also of frequent interaction between Nisenan- and Miwok-speaking groups.

Historical Setting

The following text has been extracted and edited from the *Built Environment Inventory and Evaluation Report for the Coyote Creek Agrivoltaic Ranch Project* prepared by ECORP in February 2024 (ECORP 2024). See Appendix CR-1 for the non-confidential version of the report.

Early Development of Carson Creek Area

In the northeastern corner of Sacramento County, in Natoma Township, placer mining during the Gold Rush occurred primarily along the South Fork of the American River in the vicinity of Mormon Island—located below current day Folsom Lake, approximately seven miles north of the project site. To the south, along Carson Creek, hard rock mining took hold after 1855. At Wall's Diggings, located midway between Carson Creek and Deer Creek—just east of the project site— prospectors located rich quartz leads in exposed rock. Crushing ore with arastras and steam mills, they produced $20 to $30 in gold per ton in 1857. A settlement called Walltown developed in the vicinity of Wall's Diggins. At its peak, during the late 1850s, Walltown had a population of 200, enough to support three general stores, two taverns, two butcher shops, two billiards saloons, a clothing store, and a bakery. Walltown declined after 1860. By 1890, "the town had gradually faded from the landscape."

After 1860, farming and ranching eclipsed mining along Carson Creek. Farmers in the northern half of Natoma Township grew hay and grain while those in the southern half grew wheat and barley and engaged in dairy farming, almost all raised livestock. The State Agricultural Society in 1903 described the "up, or red, lands" of eastern Sacramento County between the Mokelumne River and the American River as "devoted largely to the growing of grain and hay and to stock-raising and dairying." By 1900, the southern half of Natoma Township became colloquially identified by its school district, Carson Creek.

In local newspapers, farmers and ranchers living in the southern half of Natoma Township were said to live at “Carson Creek.”

CATTLE RANCHING AND DAIRY FARMING

Expansive grasslands, benign winter weather, and steady demand for beef and dairy products made cattle ranching and dairy farming the leading land use activities in eastern Sacramento County. Demand was never higher than during the Gold Rush, as cattle prices jumped from four dollars a head to several hundred dollars for the highest quality steers. Prices for beef and dairy increased at corresponding rates, prompting some miners to abandon the gold fields and take up ranching at lower elevations along tributaries of the American, Cosumnes, and Mokelumne rivers.

After the Gold Rush, demand for beef and dairy products in California shifted from gold camps to cities and towns. Eastern Sacramento County ranchers who previously supplied the mines now sent their goods to creameries and butchers in Folsom, Sacramento, and San Francisco. Disaster struck in 1862-1865, when drought conditions in California reduced herds by 50 percent. No-fence laws, which favored farmers by shifting the burden of fencing rural properties to livestock owners, also became implemented during this time, causing ranching to move away from the free-range style of Mexican ranchos to the European style of feedlots and fenced areas. No-fence laws became established in Sacramento County in 1870. Cattle ranchers, however, remained permitted to drive their cattle over uncultivated, unfenced lands to reach fresh water and grass at higher elevations.

Ranchers in eastern Sacramento County responded by annually driving cattle to mountain pastures in the Sierra Nevada, a practice called *transhumant grazing*. Summer grasses in the Sierra Nevada exceeded those of eastern Sacramento County, and cooler temperatures facilitated dairying. Many ranchers established twin ranches: a winter ranch in northeastern Sacramento County and a summer ranch in the mountains. Each spring, ranchers rounded up their livestock and drove them up mountain wagon roads to mountain summer pastures. Then each fall, before the first snowfall, ranchers returned their herds to northeastern Sacramento County, where winter temperatures rarely dropped below freezing. An October 1901 issue of *Dairy and Produce Review* discussed the practice: “A number of dairymen in the vicinity of Folsom, Sacramento County, take their herds to the Sierra mountains during the summer for pasturage, and winter them at Folsom. Their milking season is on during their stay in the mountains, the milk being made into butter, which is pickled and held until fall. This system furnishes these dairymen with cheap pasturage of an exceedingly good quality with ideal dairy conditions at small expense. It is reported from Folsom that the herds of Carduff & Speck, Scott Bros., J. Perazzo and J. Fleckstein have already returned from the mountain pastures.”

Local newspapers such as the *Folsom Telegraph* also reported on the seasonal departures and arrivals of ranchers and their herds, including those of the Sales and Barton families. Both families had a hand in shaping the property now known as the Barton Ranch located at 3830 Scott Road in eastern Sacramento County.

THE SALES AND BARTON FAMILIES

Barton Ranch Headquarters is located at 3830 Scott Road in Sacramento County, California within the project site. The headquarters is a concentration of buildings and structures that form the nucleus of a cattle ranch and dairy farm established by the Sales family in 1873 and substantially developed by the Barton family after 1911.

William Sales was born in England in 1819 and arrived in the U.S. in 1843. He married Elvira Balsover of Evansville, Indiana in 1849. The couple toured with Gilbert Spaulding's North American Circus before settling in California in 1853. William and Elvira acquired the southeast quarter of Section 6, T8N R8E along Carson Creek using Morrill Act land scrip in 1873. The couple later acquired adjoining acreage in sections 5 and 8, forming the basis of a cattle ranch. William Sales died in 1888. Probate records show that he left behind 400 acres, a farmhouse, 25 cows, 20 calves, 20 yearlings, three horses, a mowing machine, and other farm equipment, indicating a small but well-established ranching operation. His wife, Elvira Sales, passed away in January 1890.

The Folsom Telegraph reported in 1892 that the "Sales Brothers" had "disposed of their dairy stock" in favor of planting grain, an indication that William and Elvira's three sons maintained the ranch at Carson Creek following their parents' deaths. The Sales family owned the property through 1899. W. H. Johnson acquired it in 1900, followed by W. F. Sperry and then the Barton family. William and Elvira's oldest son, George Sales, may have continued working on the ranch after 1899. When George Sales died in 1945, the Folsom Telegraph observed that George had, "for the greater part of his life [worked as a] cattleman, dairying on the old Sales ranch near Wall Town, Sacramento County".

Sometime between 1911 and 1917 (some reports suggest 1914), William Delos "Will" Barton and his wife, Ouida (Kyburz) Barton acquired the Sales ranch at Carson Creek. Will Barton, a lifelong northeastern Sacramento County rancher, grew up on his family's cattle ranch along Deer Creek, 2 miles east of the Sales Ranch. His father, Hiram E. Barton, was a contemporary of William Sales. By 1880, Hiram Barton's herd numbered more than 300 head of cattle. Like many of their contemporaries, the Barton family annually drove their livestock into the Sierra Nevada for summer grazing. The family operated a dairy on the south shore of Lake Tahoe and also owned 580 acres in Alpine County. Immersed in ranching and dairy farming from a young age, Will Barton took great pride in "his record of taking cattle to Lake Tahoe every year of his life".

Will Barton's wife, Ouida (Kyburz) Barton, descended from an old California family. Her grandparents, Samuel and Rebeca Kyburz, traveled to California in 1847 with the Donner Party but avoided the group's infamous winter ordeal. Samuel Kyburz managed John Sutter's business affairs at Sutter's Fort in 1847. A year later he played a role in locating the sawmill at Coloma where James Marshall discovered gold. After the Gold Rush, Samuel and Rebecca Kyburz established a cattle ranch at Clarksville in western El Dorado County. Years later their son, John Daniel "Dan" Kyburz, and his wife, Jennie (Finch) Kyburz, established their own cattle ranch near White Rock in Natoma Township and raised two children. Their daughter, Ouida, was born in 1880. The Kyburz family, like other ranchers in eastern Sacramento County, annually drove their livestock into the Sierra Nevada for summer grazing and dairying.

Will Barton and Ouida Kyburz wed in 1902. Their oldest daughter, Faye, was born in 1903 in Clarksville. Their youngest daughter, Alva, was born in 1906 in Sierra Valley at Weber Lake, 25 miles northwest of Lake Tahoe, where Will and Ouida operated a summer dairy farm. In 1910, the family lived with Ouida's parents at their Kyburz ranch. Sometime between 1911 and 1917, the couple acquired the Sales Ranch at Carson Creek.

Each year in the late spring, the Barton family rounded up their livestock, gathered their essential belongings, and drove their cattle up what is now the U.S.50 corridor to the south shore of Lake Tahoe for summer grazing. Ouida Barton drove a chuckwagon and cooked for the family and their employees. At Lake Tahoe, the Barton family operated the Lake Valley Creamery. Dairy stables, pack mule rentals, chickens, lambs, and beef cattle were all part of the operation. Sisters Alva and Faye recalled taking turns milking cows and delivering milk, cream, butter, and eggs to customers who maintained summer homes on the south shore of the lake.

Each fall, before the first snowfall, the family packed up and drove their herd back to Carson Creek. Winter months were a time of school for the children and work for Will, Ouida, and their employees. In February 1919, the Folsom Telegraph reported that "W. D. Barton" was "making extensive improvements to his ranch property near Folsom." By 1922, the Barton family had amassed a herd of more than 600 head of cattle and (according to family lore) managed to ship "more cream to the creamery than any other producer" (a claim that remains unsubstantiated by research). Much of the cream went to the Crystal Dairy in the city of Sacramento.

The Barton Ranch's increased output followed countywide patterns of growth: dairying in Sacramento County expanded rapidly between 1920 and 1923 as dairy farmers increased their herds and alfalfa yields. Multiple creameries and an evaporative milk condensery became operational in Sacramento County during the early 1920s. By one account, the overall dairying output in Sacramento County tripled during the period.

The Barton Ranch was a home but also a workplace. Through the years, the family employed several ranch hands and cowboys. Longtime employees included Dan McLain, who supervised the Barton Ranch during its quiet summer months. The family's longest-tenured cowboy, Jesse J. "Jess" Riola, began working for the Barton family as a 10-year-old orphan in 1914; Will and Ouida Barton eventually adopted him. Riola played a key role in the annual cattle drive to and from Lake Tahoe; he also supervised the transportation of cream from the Barton Ranch to the Crystal Dairy in Sacramento.

Faye Barton married Lester Ledbetter and moved to Sloughhouse in 1924. Will and Ouida Barton died nine months apart in 1956 and 1957. After her parents' deaths, Alva Barton, who remained unmarried, took on a supervisorial role at the ranch and became an active member of the Nevada-California Cattlemen's Association. Her adopted brother, Jess Riola, died in 1984 and her sister Faye passed away in 1999. Alva Barton, a resident of Barton Ranch at Carson Creek for 90 years, died in 2004. In January 2022, Huth Ranch LLC of Galt, California acquired the Barton Ranch property. Huth Ranch LLC is not associated with descendants of the Barton family.

A number of historic-age resources associated with cattle ranching and grazing were identified within the project site on the Barton Ranch including earthen dams and reservoirs, wells, and ditches.

Rural Transportation Routes

The project site is traversed by several historic-age roadways. Scott Road originated as a Gold Rush wagon road that facilitated traffic from the Placerville and Sacramento Road (today's White Rock Road) to mining camps near the Cosumnes River such as Live Oak and Michigan Bar. The road later served eastern Sacramento County farmers and ranchers and became identified by its principal destination, Scott Ranch, a cattle ranch established by John P. Scott on the south side of Deer Creek. Boys Ranch Road in eastern Sacramento County is a two-lane rural county road paved with asphalt built circa 1960 to facilitate traffic from the Scott Road to Boys Ranch, a juvenile detention facility, which is located outside of the project site. Payen Road is a 12-foot-wide, private dirt access road built circa 1940 to facilitate traffic from Scott Road to Payen Ranch.

Electrical Transmission Lines

The project site is traversed by several historic-age Pacific Gas & Electric Company transmission lines. The Gold Hill-Bellota-Lockford 115kV line, a north-south oriented line running through the project site west of Scott Road, was built in the early 1940s. A high-tension 230kV line was built by SMUD in 1957 and a parallel high-tension 230kV line was built by Pacific Gas & Electric Company in 1958 at the western edge of the project site.

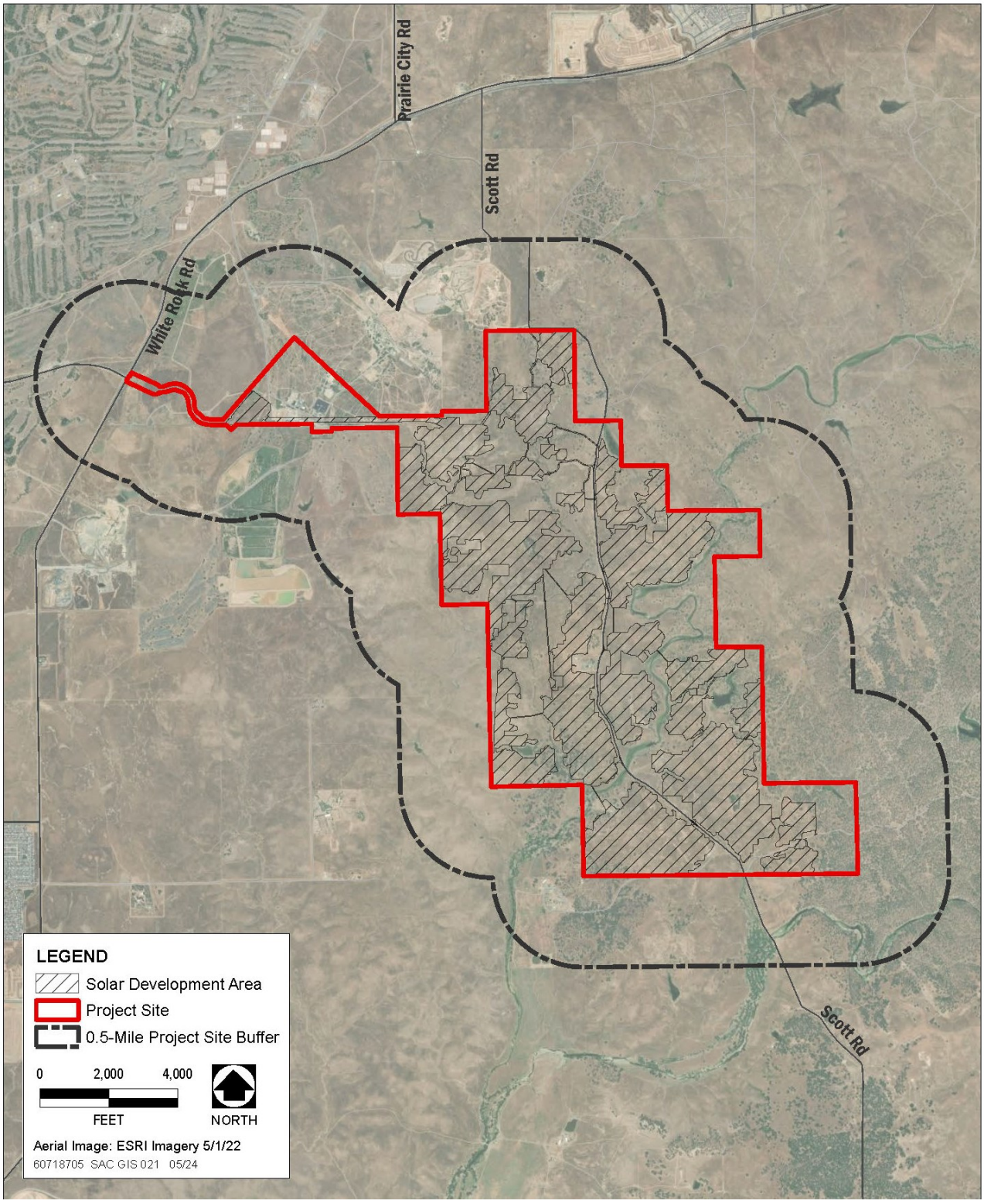
Cultural Resources Identification

Research to identify cultural resources within the project site included records searches, historic map analysis, examination of data collected from earlier archaeological investigations, Native American consultation, and project-related archaeological and built environment field surveys of the project site. (See Appendix CR-1 for more details.)

Background Research

A records search of the Coyote Creek Agrivoltaic Ranch project site and a 0.5-mile radius (Plate CR-1) was completed by staff at the North Central Information Center (NCIC) of the California Historic Resources Information System, located at California State University, Sacramento, on June 17, 2021 to identify cultural resources, historic-age built environment resources, and TCRs. The records search included reviews of previously conducted studies, the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), the California Inventory of Historic Resources (1976), California Historical Landmarks (1996), California Points of Historical Interest (1992 and updates), the Historic Property Data File, and historic General Land Office and USGS maps. The NCIC records search identified 31 previously recorded cultural resources (built environment and archaeological) within the project site and an additional 61 cultural

Plate CR-1: Cultural Resources Study Area



Source: ECORP 2024, adapted by AECOM 2024

resources within 0.5-mile of the project site. Of these, 10 historic-age built environment resources are within the solar development area.[1]

The 31 cultural resources previously recorded within the project site include precontact habitation sites containing reported human burials, precontact bedrock milling sites, an indigenous lithic scatter, and numerous historical mining sites and features, including three mining districts. Of the previously recorded cultural resources, only the Walltown Historic Mining District (P-34-002157) and the Capital Dredging Company Diggings (P-34-002299) had been evaluated for eligibility for listing in the NRHP and/or CRHR. Walltown Historic Mining District (P-34-002157) was found eligible for listing in both registers and the Capital Dredging Company Diggings (P-34-002299) was found ineligible for listing in both registers.

The 10 historic-age built environment resources previously recorded within the solar development area include a rock fence, bridge abutment, a well, an earthen dam, Capital Dredging Company Dredge Tailings, three transmission lines, an earthen dam and reservoir, and an unlined ditch. One transmission line (P-34-2195) and the Capital Dredging Company Dredge Tailings (P-34-2299) were previously found ineligible for listing in the NRHP and/or CRHR.

Survey Results

Archaeology

Dudek archaeologists conducted intensive pedestrian surveys of the project site between June 24 and August 9, 2021, and February 8 and March 21, 2021, to identify archaeological cultural resources. In total, 140 resources (31 identified in the records search [with only one (P-34-1399) not re-located during the survey] and 109 newly recorded resources) were identified within the larger project site, including precontact bedrock milling features and historic-era dams, homesteads, and mining-related features. In total, 73 of these resources (nine previously recorded and 64 newly recorded) intersect the solar development area (i.e., the area of direct impacts), most of which are historic-era features related to mining activities that occurred in the late nineteenth and early twentieth centuries. These mining features are related to the adjacent previously recorded mining districts (P-34- 000335, P-34-002157, and P-34-002299). P-34-002157, the Walltown Historic Mining District, appears to be the most pertinent of these districts, because features observed in the central and southern portions of the project site do

[1] The project site consists of 2,704 acres which exceeds the limits of impact for the proposed photovoltaic facility. The “solar development area” is the 1,412-acre portion of the project site where project components and site disturbance activities related to construction and operation of the proposed photovoltaic solar energy facility could occur (i.e., the limits of direct impact). The solar development area is synonymous with the “Project Area of Potential Effects (APE)” in the Archaeological Resources Inventory Report for the Coyote Creek Agrivoltaic Ranch Project (Archaeological Resources Inventory Report) prepared by Dudek in February 2024. As part of the Built Environment Inventory and Evaluation Report for the Coyote Creek Agrivoltaic Ranch Project prepared by ECORP in February 2024, ECORP staff only recorded and evaluated historic-age built environment resources located in the solar development area.

appear to be consistent with those documented as part of this district, which lies to the east. The Walltown Historic Mining District represents an extensive complex of mining features, water conveyance systems, and residential sites dating to the 1870s and 1880s and associated with California's immigrant Chinese population. It has potential to be a significant resource based on the following themes: ethnicity, nineteenth-century regional mining history, and mining technology.

A total of 73 historic-era resources intersect the solar development area or are immediately adjacent. These include mining sites and features, earthen berms and dams, rock alignments, and ditches. These resources are largely functional and/or activity specific; no resources with evident artifacts or cultural deposits intersect the solar development area. Appendix CR-1 lists those resources identified in or immediately adjacent to the solar development area.

Built Environment

ECORP architectural historians conducted a field visit of the project site on May 27, 31, and June 16, 2022, and August 8, 2023, to revisit 10 previously recorded built environment resources and documented 9 newly recorded built environment resources. The nine newly recorded historic-age built environment resources were the Barton Ranch Headquarters, a well, Scott R, Boys Ranch Road, Payen Road, and four reservoir/water feature resources. Table CR-1 lists those historic-era built environment resources identified within the solar development area.

Table CR-1. Built Environment Resources Recorded and Evaluated by ECORP

Resource ID	Site Description	NRHP/CRHR Eligible?
P-34-1573/CA-SAC-950H	Rock fence line	No
P-34-1575	Bridge abutment on Coyote Creek	No
P-34-1576	Stone lined well located east of Coyote Creek	No
P-34-1577/CA-SAC-951H	Earthen dam on Coyote Creek	No
P-34-2195	Transmission Line	No
P-34-2299	Capital Dredging Company Dredge Tailings	No
P-34-5264/CA-SAC-1258H	Ditch	No
P-34-5265/CA-SAC-1259H	Ditch	No
P-34-5267/CA-SAC-1261H	PG&E 230 kV Transmission Line	No
P-34-5268/CA-SAC-1262H	PG&E 230 kV Transmission Line	No
CC-01	Barton Ranch Headquarters District (consists of 16 buildings and structures)	No
CC-02	Well	No
CC-03	Scott Road	No
CC-04	Boys Ranch Road	No
CC-05	Payen Road Dirt Road	No
CC-07	Earthen dam and reservoir	No
CC-08	Earthen dam and reservoir	No
CC-09	Earthen dam and reservoir	No
CC-10	Earthen dam and reservoir	No

Source: ECORP 2024

CRHR = California Register of Historical Resources; ID = identification; kV = kilovolt; NRHP = National Register of Historic Places; PG&E = Pacific Gas & Electric Company

Native American Consultation

The County conducted government-to-government consultation with traditionally culturally affiliated tribes in accordance with Assembly Bill 52. During government-to-government consultation, culturally affiliated tribes identified TCRs within the project site and outlined the importance of the Tosewin Region and its contribution to past tribal activities and history. This information from the tribes resulted in a Proposed Tribal Cultural Resources Avoidance and Minimization Plan (TCR AMP), prepared by ECORP in July 2023 on behalf of the County, which directed the preparation of an ethnography of the Tosewin Region based on oral interviews and archival information from the United Auburn Indian Community, Shingle Springs Band of Miwok Indians, Ione Band of Miwok Indians, and Wilton Rancheria culturally affiliated tribes. Please see Chapter 13 for details related to TCRs. See Chapter 13, “Tribal Cultural Resources” for more information regarding AB 52 consultation and the evaluation of effects on TCRs.

Paleontological Resources

Regional and Local Geology

Most of the project site is situated within the gently rolling foothills along the west side of the Sierra Nevada (in the Sierra Nevada geomorphic province). The northwestern corner of the project site is situated at the eastern margin of the Sacramento Valley (in the Great Valley geomorphic province).

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 5 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 forms the northern third of the Great Valley, which includes approximately 33,000 square miles and fills a northwest-trending structural depression bounded on the west by the Great Valley Fault Zone and the Coast Ranges, and on the east by the Sierra Nevada and the Foothills Fault Zone. The Great Valley is composed of thousands of feet of sedimentary deposits that have undergone periods of subsidence and uplift over millions of years. During the Jurassic and Cretaceous Periods of the Mesozoic era (206–144 million years Before Present [B.P.]), the Great Valley existed in the form of an ancient ocean. By the end of the Mesozoic era (144 million years B.P.), the northern portion of the Great Valley began to fill with sediment as tectonic forces caused uplift of the basin. By the time of the Miocene epoch, approximately 24 million

years B.P., sediments deposited in the Sacramento Valley were mostly of terrestrial origin. Most of the surface of the Great Valley is covered with Holocene (11,700 years B.P. to present day) and Pleistocene (11,700–2.6 million years B.P.) alluvium. This alluvium is composed of sediments from the Sierra Nevada to the east and the Coast Ranges to the west that were carried by water and deposited on the valley floor. Siltstone, claystone, and sandstone are the primary types of sedimentary deposits. Older Tertiary deposits underlie the Quaternary alluvium in the Great Valley.

Based on a review of regional geologic maps (Guterriez 2011, Helley and Harwood 1985, and Wagner et al. 1981), the project site is underlain by several different rock formations of varying compositions and ages, as shown in Plate CR-2 and described in Table 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 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-2 presents the results of the paleontological sensitivity assessment based on a review of regional geologic maps, a literature review, and a paleontological resources records search performed at the University of California, Berkeley Museum of Paleontology (UCMP) on February 14, 2024.

Table CR-2. Paleontological Sensitivity Assessment

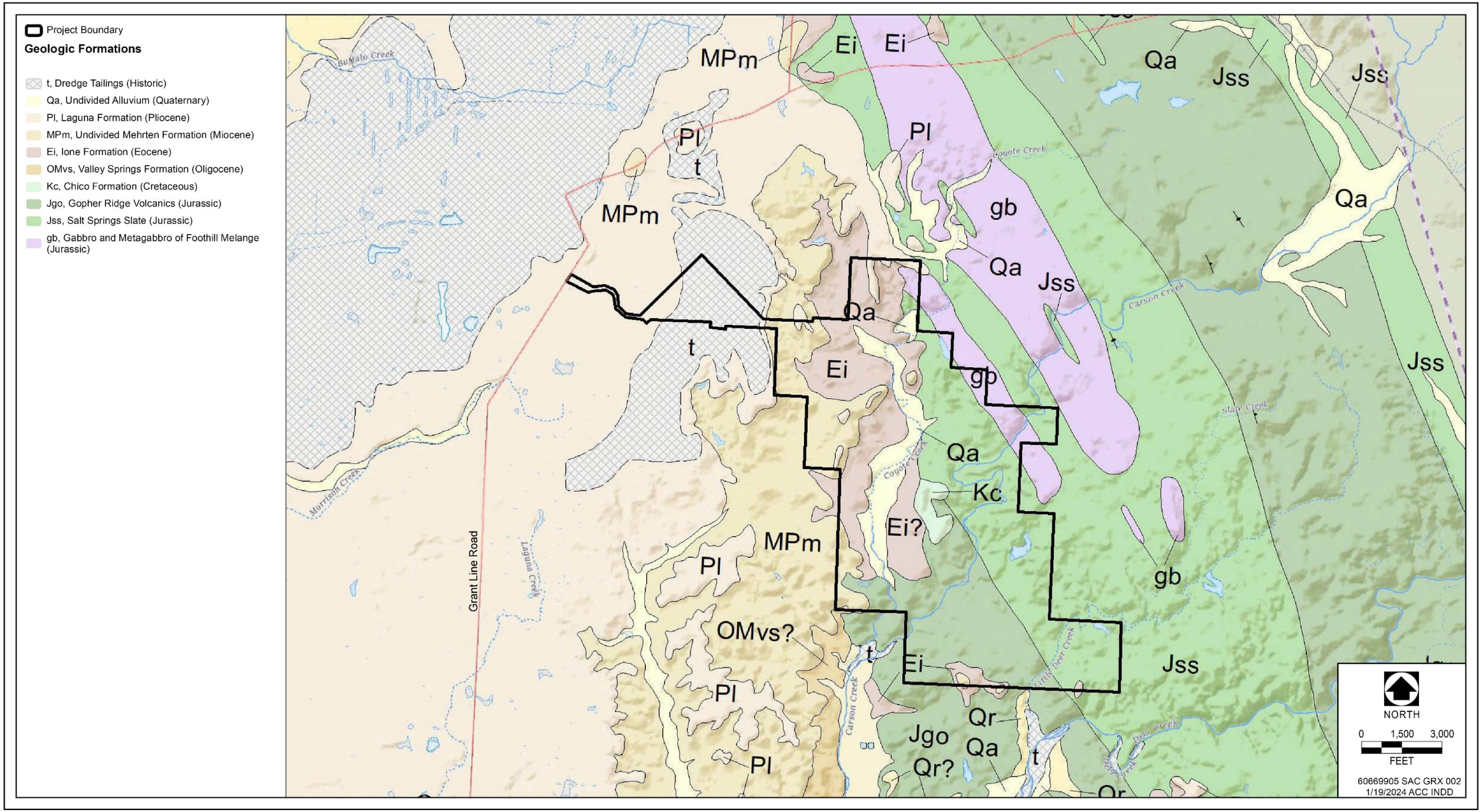
Formation Name and Age	Composition	Fossils	Sensitivity
Dredge tailings, Historic (the last 200 years)	Gravel, cobbles, boulder, sand, and silt resulting from historic mining operations.	Dredge tailings are the result of historic, machine-operated mining. Any fossil resources that may have been present in the original materials were destroyed during the dredging process; thus, there are no vertebrate fossils or fossil plant assemblages.	No
Alluvium, undivided, late Pleistocene (129,000 to 11,700 years B.P.) to Holocene (11,700 years B.P. to Present Day)	Undivided alluvium consisting of flat, relatively undissected fan, terrace, basin deposits, and small active streams.	This formation consists primarily of Holocene-age alluvium. Holocene deposits contain only the remains of extant, modern taxa (if any resources are present), which are not considered “unique” paleontological resources. Given the small amount and the very young age of Pleistocene-age deposits included in this formation, it is unlikely that unique paleontological resources are present.	Low
Laguna Formation, Pliocene (approximately 5 million years B.P.)	Reddish to yellowish brown silt to sandy silt and clay with minor lenticular gravel beds, deposited on broad floodplains by meandering, slow-moving streams. These deposits originate from granitic Sierra Nevada basement complex rocks.	There is only one published reference to a Pliocene-age vertebrate fossil specimen from 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.	Low
Mehrten Formation, Early Pliocene–Late Miocene (approximately 5–9 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
Valley Springs Formation, Early Miocene–Late Oligocene (22–26 million years B.P.)	Pumice, rhyolitic tuff, sandstone, and conglomerate from volcanic lava flows that occurred in the Sierra Nevada, were washed into streams, and transported downstream to form fluvial deposits.	A few isolated plant fossils have been recovered in El Dorado and Calaveras Counties. No vertebrate fossils have been recorded.	Low

Formation Name and Age	Composition	Fossils	Sensitivity
Ione Formation, Eocene (35–55 million years B.P.)	Primarily light-colored sandstone and claystone (kaolin clay) in the southeastern Sacramento Valley, with minor conglomerate. Extends in a belt over 200 miles along the western edge of the Sierra Nevada. Likely of deltaic and/or estuarine origin.	Numerous large assemblages yielding hundreds of plant fossils have been recovered throughout the Sierra Nevada foothills, particularly from Ione, Iowa Hill, and Camanche Reservoir.	High
Chico Formation, Upper Cretaceous (65–99 million years B.P.)	Marine sandstone, siltstone, shale, and conglomerate.	Twelve different localities in Contra Costa, Monterey, Alameda, Tehama, Butte, and Placer Counties have yielded over 30 vertebrate fossil specimens from species including shark, bony fish, sea turtles, reptiles, and birds.	High
Salt Springs Slate, Jurassic (151–159 million years B.P.)	Dark gray slate with subordinate tuff, greywacke, rare conglomerate and mica schist. Metamorphosed from shale.	Believed to have originated near an oceanic island volcanic arc that was later accreted (added) to the continental margin during the Jurassic period (approximately 150–200 million years ago) and subsequently deformed. Because these rocks were metamorphosed, they do not contain vertebrate fossils or fossil plant assemblages.	No
Gopher Ridge Volcanics, Jurassic (162 million years or more B.P.)	Metamorphosed mafic to andesitic pyroclastic rocks, lava and pillow lava with subordinate felsic porphyritic and pyroclastic rocks.	Believed to have originated near an oceanic island volcanic arc that was later accreted (added) to the continental margin during the Jurassic period (approximately 150–200 million years ago) and subsequently deformed. Because these rocks were metamorphosed, they do not contain vertebrate fossils or fossil plant assemblages.	No
Gabbro and Metagabbro of Foothill Mélange, Mesozoic (200 million years B.P.)	The Foothill Mélange is a chaotic mixture of metasedimentary and metavolcanic rocks of varying lithologies and ages. Gabbro is a mafic intrusive igneous rock formed from the slow cooling of magnesium-rich and iron-rich magma into a crystalline mass deep beneath the Earth's surface. Metagabbro is a metamorphosed variant of gabbro.	Because of the way in which these rocks were formed, gabbro and metagabbro do not contain fossils.	No

Notes: B.P. = Before Present

Sources: Creely and Force 2007, Helley and Harwood 1985, Jefferson 1991a and 1991b, Marchand and Allwardt 1981, Olmsted and Davis 1961, Piper et al. 1939, Sierra College Natural History Museum 2011, Springer and Day 2005, Stirton 1939, The Paleontology Portal undated, Wagner et al. 1981, UCMP 2024

Plate CR-2: Geologic Formations



Source: Dudek 2024b based on Gutierrez 2011; adapted by AECOM in 2024

REGULATORY SETTING

FEDERAL

No federal plans, policies, regulations, or laws related to paleontological resources apply to the proposed project.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT, 1966

Section 106 of the National Historic Preservation Act (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 NHPA-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 2024). 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 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 Public Resources Code 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 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 Public Resources Code 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 (Public Resources Code Section 21083.2 [a], [b] and [c]). 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 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

Public Resources Code 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. Public Resources Code 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

Public Resources Code 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. 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 Section 7050.5

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). 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

The California Public Records Act, described in Government Code Sections 6250 through 6270 requires that public records be accessible to the public at large for inspection purposes. Government Code Section 6254.10 clarifies that the California Public Records Act does not require 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 VIII, Cultural Resources, the following goal and six objectives:

Goal: 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:

Policy 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.

Policy CO-152: Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.

Policy 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.

Policy 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.

Policy 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.

Policy CO-156: The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.

Policy CO-157: Monitor projects during construction to ensure crews follow proper reporting, safeguards, and Policy procedures.

Policy 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.

Policy CO-159: Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

Policy CO-164: Structures having historical and architectural importance shall be preserved and protected.

Policy 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.

Policy CO-166: Development surrounding areas of historic significance shall have compatible design in order to protect and enhance the historic quality of the areas.

Policy 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".

Policy 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 states under Section VIII the following policies related to paleontological resources that apply to the proposed project.

Policy CO-161: As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

Policy 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.

Policy 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 AND UNIQUE GEOLOGIC FEATURES

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on paleontological resources or unique geologic features 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.

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.

METHODOLOGY

CULTURAL RESOURCES

As described above and in the technical reports prepared for archaeological and historic-era built environment resources (Appendix CR-1), archival research, Native American consultation, and fieldwork were conducted to establish what cultural resources may be present within the project site 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 Archaeological Resources Inventory Report (Dudek 2024a) and the Built Environment Inventory and Evaluation Report (ECORP 2024) which include eligibility evaluations of identified resources. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

RESULTS

As previously discussed, a records search was completed for the project site and a 0.5-mile buffer by staff at the NCIC at California State University, Sacramento, on June 17, 2021. The NCIC records search identified 31 cultural resources within the project site, of which 9 resources are within the solar development area; all but one of the 31 resources previously recorded within the project site were located during Dudek's pedestrian survey. During the survey, 109 new resources were identified within the project site. Of these, 64 newly recorded resources intersect the project site and 11 are within a 50-foot buffer. In summary, the 73 resources intersecting the solar development area are historic-era resources including mining sites and features, earthen berms and dams, rock alignments, and ditches. No complex historic-era resources, such as homesteads or other sites with evident potential for buried archaeological resources intersect the solar development area. The eligibility of these resources as historical resources and/or unique archaeological resources under CEQA are discussed below.

HISTORIC-ERA BUILT ENVIRONMENT RESOURCES

Evaluations for NRHP and CRHR eligibility were prepared for 18 of the 19 built environment resources identified within the solar development area, as part of the Built Environment Inventory and Evaluation Report (ECORP 2024). These historic-age built environment resources include a rock fence line, mining tailings, bridge abutments, two wells, two ditches, three transmission lines, three roads, and five earthen dams. Eighteen resources were found to be ineligible for listing in the NRHP and CRHR (see Table CR-2). The 19th resource, the Capital Dredging Company Dredge Tailings (P-34-2299), was previously assessed and found ineligible for listing in the NRHP and CRHR (JRP Historical Consulting 2019); ECORP agreed with the previous analysis and finding.

HISTORIC-ERA ARCHAEOLOGICAL RESOURCES

A total of 73 historic-era archaeological resources intersect the solar development area or are immediately adjacent. These include mining sites and features, earthen berms and dams, rock alignments, and ditches. These resources are largely functional and/or activity specific; no resources with evident artifacts or cultural deposits intersect the solar

development area. All remaining resources located outside of the solar development area remain unevaluated.

CRHR-ELIGIBLE ARCHAEOLOGICAL RESOURCES

P-34-002157 is the Walltown Historic Mining District, an extensive complex of mining features, water conveyance systems, and residential sites dating to the 1870s and 1880s and associated with California's immigrant Chinese population (Baxter and Allen 2008). The previously documented district boundary borders the northeastern portion of the project site, but does not enter into it; however, the district boundary was defined by the project limits of the archaeologists evaluating the district at the time rather than the full spatial extent of sites and features associated with the district.

Previously recorded sites that were considered to be contributing features to the district included sites with a complex of placer mining activity, water conveyance ditches, and possible residences and associated features. These sites were largely tied together via roads, ditches, or similar infrastructure and could thus be considered a part of the same mining landscape. Non-contributing sites included hardrock mines, prospect pits, and other rock alignments or cairns that were not clearly related to mining activities. Based on the integrity of the overall landscape and the potential to address research themes related to placer mining and the social environment, technology, and architecture of marginalized Chinese immigrant communities, the district appears eligible for the CRHR (Baxter and Allen 2008; Dudek 2024a).

In summary, P-34-002157 adds to the regional understanding of California's immigrant Chinese mining population lifeways and history during the late nineteenth century (Criterion 1). Due to the absence of historical documentation focusing on this community, it does not appear that the district is associated with the lives of specific persons important to history (Criterion 2). This resource represents an extensive complex of mining features, water conveyance systems, and residential sites dating to the 1870s and 1880s. District features, deposits, and archaeological assemblage may inform an understanding of social organization, residential habitation activities, and other elements that are specific to California's immigrant Chinese mining population during the late nineteenth century have been documented to fall within this district (Criterion 3 and Criterion 4).

Dudek (2024) expanded the boundary of the Walltown Historic Mining District, to include resources identified during field surveys that appear to be contemporaneous and associated with the district. There are 59 individual sites and features intersecting or near the Coyote Creek solar development area that fall within the expanded P-34-002157 district boundary (Table CR-2). These sites are considered CRHR eligible as contributors to the district, because they may contribute to significance-defining themes associated with Criterion 1. While the observable physical characteristics of these individual resources do contribute to the larger Walltown district significance (i.e. as these attributes pertain to Criterion 3 and Criterion 4 values) they appear to have been appropriately captured through the field recording and documentation provided in the Archaeological Resources Inventory Report (Dudek 2024a).

CRHR-INELIGIBLE ARCHAEOLOGICAL RESOURCES

In addition to the 60 CRHR-eligible resources (the Walltown Historic Mining District and 59 associated/contributing individual sites) discussed above, 13 additional resources (two mining districts and 11 individual historic-era archaeological resources) were identified within or adjacent to the solar development area. None of these 13 resources are considered eligible for the CRHR through formal evaluation (Table CR-1). (Dudek 2024a).

P-34-000335, the Folsom Mining District, encompasses the region historically dredge mined in the area around the American River, including parts of Folsom, Natoma, and Rancho Cordova. At present, the Folsom Mining District itself is primarily an organizational mechanism for consolidating and synthesizing individual resources relating to the region's mining history. The district encompasses numerous other formally recorded "subdistricts," sites, and features that incorporate both historical information and extant archaeological remains of mining activities. Among the resources encompassed by the Folsom Mining District are the Natomas-Aerojet Dredge Fields, the Prairie Diggings Placer Mining District, the Alder Creek Corridor Mining District, the American River Gold Mining District, the Capital Dredging Company Diggings, the Willow Springs Hill Locus, and numerous other mining properties, sites, and features. The Capital Dredging Company Diggings (P-34-2299) intersect the current project site. Aside from the Capital Dredging Company Diggings (P-34-2299, discussed below), no previously recorded elements of the Folsom Mining District intersect the project site. The Folsom Mining District is an organization mechanism and does not have formal NRHP or CRHR status or eligibility determinations.

P-34-002299 is the site of the former Capital Dredging Company Diggings, which operated from 1927 through 1952. The site is located in the Prairie City SVRA property and the property to the immediate south. The site borders much of the northwestern portion of the project boundary and intersects a portion of the project boundary. The Capital Dredging Company Diggings is a large gold-dredging field comprising mostly tailings, ponds, ditches, and berms associated with dredging operations. The resource is located within the conceptual Folsom Mining District (P-34-000335; discussed above). Evaluation of the resource has previously determined that P-34-002299 is not eligible for listing in either the NRHP or CRHR (Melvin et al. 2019). The elements of P-34-002299 are not considered significant individually within the context of dredge mining in the Folsom area, as it followed existing patterns and trends in development (Criterion 1); is not associated with the lives of persons important to history or a significant example of a type, period, or method of construction (Criterion 2); and it is not a significant or likely source of important information regarding historical construction materials or technologies that is not otherwise available through documentary evidence (Criterion 3); and, is not a significant or likely source of important information about historic construction materials or technologies that is not otherwise available through documentary evidence (Criterion 4). The resource is also not eligible as a contributor to a larger district, as the Folsom Mining District is not listed in the NRHP or CRHR. No sites assigned to this district are documented in the solar development area.

Eleven additional historic-era archaeological resources fall within or near the solar development area. These include: a fence alignment (P-34-001573); earthen berm and

pond (P-34-005261); placer mine tailings (CCAR-S-36); a concrete-lined well (CCAR-S-37); and mechanically-excavated mining pits, ditches, and tailings piles (CCAR-S-38; CCAR-S-39; CCAR-S-41; CCAR-S-45; CCAR-S-49; CCAR-S-50; and CCAR-S-100). These fall outside of and are not associated with the above-discussed mining districts. All of these individual resources were found not eligible to the NRHP or CRHR (Dudek 2024a). These resource does not appear eligible for the CRHR because they are not associated with events that have made a significant contribution to broader patterns in history (Criterion 1); research failed to indicate any associations with significant persons (Criterion 2); they do not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion 3); and such resources are common throughout the region, and not likely to yield any information important in prehistory or history (Criterion 4), beyond what has already been identified as a result of the Archaeological Resources Inventory Report (Dudek 2024a).

Precontact Native American Archaeological resources

No precontact Native American archaeological resources are documented within the solar development area. A total of 14 precontact sites were identified within or adjacent to the larger project site but were excluded from the solar development area through project design.

All precontact archaeological resources are considered eligible for the CRHR. The applicant will be required to avoid and preserve-in-place all recorded precontact indigenous archaeological sites through implementation of management recommendations related to precontact archaeological sites and Tribal Cultural Resources contained in the *Proposed Tribal Cultural Resources Avoidance and Minimization Plan for the Coyote Creek Agrivoltaic Ranch Project* (TCR AMP) (ECORP 2024; see Chapter 13 of this EIR for more detail). Two of the precontact indigenous sites were last documented in the 1930s (summarized in the 1950s) as habitation sites (P-34-000250 and P-34-000253) with reported human remains. The remaining previously recorded precontact indigenous resource, P-34-001578, is composed of a sparse lithic scatter and a bedrock milling feature identified by Dudek. The precise boundaries of P-34-000250 and P-34-000253 are unclear, since they were recorded prior to present reporting standards and the invention of more accurate GPS technology; however, review of available documentation, as supplemented by further technical study efforts, indicates that the sites fall in the same general area as initially recorded. Given the uncertainties associated with the boundaries of these resources, the maximum possible recorded site boundaries have been recorded for these areas (Dudek 2024a). These boundaries also encompass all potential resources identified during forensic canine investigations conducted as a part of ongoing tribal consultation. In addition to these previously recorded resources, one precontact bedrock milling feature was also documented within the boundary of a historic-era homestead (CCAR-S-35) that was identified during Dudek archaeological surveys.

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 (2024). 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.

There are no unique geologic features within or adjacent to the project site. Thus, there would be **no impact** on unique geologic features and this topic 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

All 19 built environment resources identified within the solar development area were found ineligible for listing in the NRHP and CRHR (see Table CR-1, ECORP 2024), therefore; there are no known built environment historical resources in the solar development area. Historical resources include any properties listed in or found eligible for inclusion in the National Register of Historic Places, California Register of Historical Resources, or those included in a local register of historical resources. The fact that a resource is not listed in, or determined to be eligible for listing in, National Register of Historic Places, the California Register of Historical Resources, or not included in a local register of historical resources shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of CEQA. In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the California Register criteria prior to making a finding as to a proposed project's impacts to historical resources (Public Resources Code Section 21084.1, CEQA Guidelines Section 15064.5[3]).

According to the CEQA Guidelines, if the lead agency finds that a resource is neither an historical resource nor a unique archaeological resource, the effects of the project on the resource shall not be considered significant.

As no historical resources have been identified, **no impact** would occur.

Impact CR-2: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to Section 15064.5

While none of the identified precontact archaeological sites have been formally evaluated under CEQA, all precontact indigenous sites identified through background research and

field inventory were determined to be TCRs and have been excluded from the solar development area through project design. As is further discussed in Chapter 13, “Tribal Cultural Resources” traditionally and culturally affiliated Native American tribes have been contacted by the County to provide input on precontact indigenous resources in close proximity to the solar development area, particularly P-34-000250 and P-34-000253. Site visits were also completed with tribal representatives in these areas. CEQA defines TCRs as a distinct resource type under CEQA. TCRs may include non-unique archaeological resources. The applicant will be required to avoid and preserve in place all recorded precontact indigenous archaeological sites, consisting of 14 sites in total. In addition to avoidance of known archaeological resources, management strategies related to precontact indigenous archaeological sites and TCRs are contained in the TCR AMP (ECORP 2024). These 14 resources are assumed to be NRHP/CRHR eligible. Given the presence of significant precontact archaeological resources, geomorphic and topographic conditions suited for some areas to contain buried features and/or deposits, and the conditions during fieldwork (variable ground surface visibility during survey), it is assumed possible that additional, unrecorded precontact resources could be present. Impacts to such resources, left unmitigated, would have potential to result in a significant impact.

There are 73 historic-era resources that intersect the solar development area, including mining sites and features, earthen berms and dams, rock alignments, and ditches. No complex historic-era resources, such as homesteads or other sites with evident potential for buried archaeological resources have been identified in solar development area. The vast majority of historic-era features are related to mining activities that occurred in the late nineteenth and early twentieth centuries. These resources are largely functional and/or activity specific; no resources with substantial evident artifact or cultural deposits intersect the solar development area. Most documented archaeological sites intersecting or near the solar development area (n=59) are related to the CRHR-eligible Walltown Historic Mining District (P-34-002157), previously mapped to the northeast of the project site, and are considered contributors to the eligibility of the historic district. The remaining historic-era archaeological resources (n=14) identified within or adjacent to the solar development area are recommended to be ineligible for NRHP/CRHR listing. Observable characteristics of these resources have been fully documented to best practice standards through research, field documentation, high-accuracy post-field mapping, and recordation within the present report and Department of Parks and Recreation (DPR) forms. Given that no artifacts or artifact-bearing features were identified at any of the sites during recordation, there is a very low chance for additional deposits or features to be impacted or otherwise exposed during project activities. However, absent additional mitigation, there remains some minimal potential for project activities to result in a significant impact to undocumented historical resources.

As previously discussed, historic-era mining sites associated with the Walltown Historic Mining District (P-34-002157) should be assumed potentially eligible for NRHP/CRHR listing under Criterion A/1, Criterion C/3, and Criterion D/4. District features, deposits, and archaeological assemblage that may inform our understanding of social organization, residential/habitation activities, and other elements that are specific to California’s immigrant Chinese mining population during the late nineteenth century have

been documented to fall within this district (Criterion C/3 and Criterion D/4). Dudek's inventory of mining features has resulted in detailed recordation and mapping of all mining sites in the solar development area and adjacent areas. None of the sites or features associated with P-34-002157 in the solar development area were found to contain artifacts or likely cultural deposits (and, thus, would not benefit from additional archaeological excavations). While the observable physical characteristics of these individual resources do contribute to the larger Walltown district significance, they appear to have been appropriately captured through existing documentation. Additional field documentation would be unlikely to yield substantial additional information. That said, there remains a limited potential for as-yet unidentified deposits or features to be impacted or otherwise exposed during project activities. As such, absent additional mitigation, there remains some potential for project activities to result in a significant impact to these individual mining sites.

Additional mitigation directed at significance-defining characteristics associated with broader patterns in nineteenth-century mining history and Chinese mining ethnicity (Criterion A/1) is required. Absent this mitigation, the project may result in a significant impact.

Therefore, impacts to the above archaeological resources, and unanticipated archaeological resource discoveries during construction, are considered **potentially significant.**

Mitigation Measures

CR-2a. Cultural Resource Management Plan (CRMP).

In order to mitigate impacts to known archaeological resources and those resources that may inadvertently be encountered during construction-related activities, a Cultural Resource Management Plan (CRMP) shall be prepared and implemented. The CRMP shall be reviewed by the County and finalized prior to construction permit issuance. The CRMP shall, at a minimum, include the following components:

- Recorded sites with precontact indigenous components within the project site shall be avoided by project design. Specific avoidance buffers and management strategies pertaining to precontact indigenous resources shall be addressed in the *Tribal Cultural Resources Avoidance and Minimization Plan* (TCR AMP). The CRMP and TCR AMP shall act as a pre-construction record of the recorded boundaries of these resources and ensure compliance with regulatory requirements pertaining to both precontact indigenous resources and/or TCRs.

- Definition of environmentally sensitive area (ESA) and methods of delineation (e.g., exclusion fencing, signage, definition on project design drawings) to ensure that both precontact and unevaluated historic-era sites outside of the solar development area remain undisturbed. ESAs will be established around all precontact and historic-era archaeological resources, including an

appropriate buffer, adjacent to the solar development area and must be physically delineated prior to construction. The ESAs shall be clearly delineated and marked using methods that do not conflict with other resource or construction styles. The ESAs shall not detail the cultural nature of that avoidance area on signage or plans. The ESAs shall be maintained through the duration of construction.

- Construction monitoring protocol (*see Mitigation Measure CR-2b, below*).

- To the extent construction activities uncover previously unknown or unanticipated cultural resources, all such activities will stop in the vicinity of the resource until the significance of the resources is determined. An appropriate buffer for avoidance during construction is typically 100 feet, which may be adjusted at the recommendation of a qualified archaeologist meeting Secretary of the Interior Qualifications, so that the exclusion buffer allows key areas of construction to proceed while ensuring that no ongoing project activities will affect the find. Where complete avoidance is determined infeasible, archaeological resources shall be evaluated for eligibility to the CRHR by a qualified archaeologist.

- Research questions relevant to the evaluation of anticipated resource types within the project area, and a research design for the evaluation of such resources. Historic-era mining-related archaeological resources may retain physical Criterion 3 and Criterion 4 values that require detailed mapping and documentation prior to any disturbance. This will require field documentation, updating DPR forms, and preparation of an additional technical report. In addition, if impacted, stacked rock features, also described as “residential features,” shall be disassembled and excavated to inspect these features for possible chronological indicators of the specific mining period, since they may be contributors to the CRHR-eligible Walltown Historic Mining District. Evaluation of precontact archaeological resources and historic-era archaeological sites with artifact deposits and/or domestic-type features will likely require an archaeological testing phase that consists of systematic excavations of a portion of the site within the solar development area to determine the integrity of the archaeological deposits, the horizontal and vertical extent of the deposits, the quantity and diversity of artifacts contained within the deposits (as they relate to the ability to answer potential research questions), and the potential for human remains. The qualified archaeologist shall assess if the archaeological site qualifies as a significant or unique archaeological resource under the criteria of CEQA Guidelines Section 15064.5, in consultation with the lead agency, who may request review by consulting tribes and a Tribal Archaeologist based on requirements of the TCR AMP, as dependent on the age and/or association of the identified cultural resource. 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; or if total avoidance is not feasible (2) 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 Guidelines Section 15126.4(b) for managing unanticipated discoveries have been met. When data recovery through excavation is selected as the appropriate mitigation measure, a data recovery plan, which makes provision for recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken.

- Define the requirements for communication and notification to the lead agency and consulting parties, daily monitoring log preparation, and final construction monitoring report. The final monitoring report shall be submitted to the lead agency, consulting tribes, and NCIC.

CR-2b. Construction Monitoring.

Prior to the start of ground-disturbing activities, and with any changes in personnel, work crews shall receive an archaeological awareness training notifying them of the archaeologically sensitive nature of the project site, focusing on common artifact/feature types, stop-work protocol, and notification protocol in the event of a potential unanticipated discovery. A qualified archaeologist shall monitor initial grading, subsurface disturbances as outlined by the CRMP. If unanticipated cultural resources are encountered during construction, the process outlined by the final CRMP shall be followed.

No additional action is required with regard to previously recorded historic-era resources within the solar development area. These areas shall be observed by an archaeological monitor during initial disturbance by construction to ensure that no additional features or unidentified deposits are encountered. In the event that newly recorded features or deposits are encountered within these areas, equipment shall be redirected while these areas are further inspected by the archaeologist. These elements shall be subject to recordation sufficient to capture their physical data potential and to inform updates to the records of these features. Information shall be captured through field methods of recordation meeting standards applied during inventory/evaluation technical studies completed for the project. If these findings do not introduce potentially significant information that would revise the individual eligibility of this resource for NRHP/CRHR eligibility under Criteria D/4, construction may resume. Any newly identified potentially significant resource or contributing element to an existing site shall be subject to provisions provided for unanticipated discovery under Mitigation Measure CR-2a and as defined in the CRMP, including review for feasibility of avoidance and/or other management options such as data recovery, should this be required.

The archaeological monitor shall monitor construction, prepare daily monitoring logs, report and assess inadvertent discoveries, communicate with on-site Native American monitors and contractors, guide installation and tracking maintenance of ESA marking, and ensure implementation of the CRMP and approved mitigation.

The final CRMP shall act as a record of compliance with guiding documents and mitigation.

Native American monitoring should be inclusive of those traditionally culturally affiliated tribes and related tribal cultural values expressed through the process of government-to-government consultation. If unanticipated cultural resources are encountered during construction, the process outlined by the final TCR AMP shall be followed.

CR-2c. Walltown Mining District Historic Study and Interpretive Plan.

A Historic Mining Study and Interpretive Plan shall be prepared and implemented. While the documentation may commence prior to or during construction, these elements may be prepared as separate documents or combined, and final drafts are anticipated post-construction, within one year of starting commercial operations on-site. The study component shall focus on providing in-depth research and documentation pertaining to the defining characteristics of Walltown Historic Mining District, specifically those elements that inform ethnicity and nineteenth-century regional mining history (NRHP/CRHR eligibility under Criteria A/1). The study shall address research themes related to placer mining and the social environment, technology, and lifeways of marginalized Chinese immigrant communities. It shall seek out and document how this group interacted with the Euro-American population. The study shall make an effort to contact and interview modern Chinese American descendent communities and/or pertinent historical societies in the region and gain insights as to how these past activities may inform or otherwise interplay with community heritage values.

The history of the Walltown Historic Mining District is a public community resource. As such, the Interpretive Plan shall provide methods for distilling, conveying, and sharing the information gathered in the Walltown Historic Mining District Study to the public. This should build on technical documentation prepared as part of this report and may take the form of a publicly accessible interpretive display, website, interactive map, or other options to be determined by the County. The project proponent shall fund the preparation of the Walltown Historic Mining District Study and Interpretive Plan and implementation of the decided interpretive method for conveying this information to the public.

Significance after Mitigation

Implementation of Mitigation Measures CR-2a, CR-2b, and CR-2c would reduce potentially significant project-related impacts on archaeological resources because mitigation would avoid, document, test, establish communication and monitoring protocols, treat discovered resources appropriately, in accordance with pertinent laws and regulations, and outline a study and interpretive plan to convey information to the public. These measures include development of a CRMP, awareness training, avoidance and protection of archaeological resources through the establishment of ESAs, archaeological and Native American monitoring, reporting, stopping work, notification of the appropriate agencies and/or Native American contacts, and procedures to evaluate,

protect, and interpret cultural resources. Therefore, with implementation of these mitigation measures, the impact would be **less than significant with mitigation**.

IMPACT CR-3: DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF DEDICATED CEMETERIES

Human remains and associated grave goods are protected under California law. No human remains have been identified within the solar development area, and all known precontact archaeological sites with the potential for containing human remains have been excluded from the solar development area through project design. The NCIC records search did identify two precontact indigenous sites within the project site (P-34-000250 and P-34-000253) and one precontact indigenous site within 0.5 miles of the project site (P-34-000221) with reported burials. No human remains were observed within these areas during the Dudek archaeological survey, although it is possible that these resources were previously subject to archaeological collection of cultural material and/or that there is not surface evidence of these remains. Forensic dog investigations have also been completed. This study did result in “alerts” within and near P-34-000250 and P-34-000253, indicating that there is further potential human remains may be in these areas. Given that these sites were originally recorded prior to GPS technology and the site records lack clearly drawn maps documenting the distribution of archaeological deposits, the exact boundaries of these sites are unconfirmed. As such, the maximum possible site boundaries have been drawn for these areas—from both previous documentation and the technical studies completed in support of the project—and used in the development of the project design and solar development area. The project design would avoid these sites by a minimum distance of 100 feet. Methods for preservation of these sites and any possible human remains that may be present shall be outlined in the CRMP and TCR AMP, as required under Mitigation Measures CR-2a (Cultural Resource Management Plan [CRMP]), CR-2b (Construction Monitoring), and TCR-1a (Title). This impact is considered **potentially significant.**

MITIGATION MEASURES

CR-3a. Treatment of Human Remains.

> If human remains are found during any project-related ground-disturbing activity, the remains shall be treated with appropriate dignity pursuant to the procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e). Project-specific requirements shall be included in the CRMP. Management of any human remains of Native American origin must occur in coordination and compliance with agreements and management strategies developed in consultation with traditionally culturally affiliated tribes, as outlined by the TCR AMP.

Implement Mitigation Measure CR-2a (Cultural Resource Management Plan [CRMP]).

Implement Mitigation Measure CR-2b (Construction Monitoring).

Implement Mitigation Measure TCR-1 (Tribal Cultural Resource Avoidance and Minimization Plan).

Significance after Mitigation

Implementation of Mitigation Measures CR-2a (Cultural Resource Management Plan [CRMP]), CR-2b (Construction Monitoring), CR-3a (Treatment of Human Remains), and TCR-1a (Title) specifies pre-construction preparation and implementation of an awareness training and archaeological monitoring actions required to reduce impacts to unanticipated human remains in the event of accidental discovery during project implementation. MM-CR-3A includes appropriate compliance with California Health and Safety Code Section 7050.5, Public Resources Code 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. Therefore, with implementation of these mitigation measures, the impact would be **less than significant with mitigation**.

Impact CR-4: Damage to or Destruction of Unique 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 underlain by 10 different rock formations of varying compositions and ages, as shown in Plate CR-2 and described in Table CR-2. As shown in Plate CR-2 (which illustrates the project site and solar development area), some of the proposed solar panels and access roads south and east of the Prairie City SVRA along Coyote Creek would be constructed in undivided Quaternary alluvium. Also, proposed facilities along the existing paved Prairie City SVRA access road would be constructed in dredge tailings. The results of the paleontological sensitivity assessment for the project site (see Table CR-2) indicate that dredge tailings are not paleontologically sensitive, and the undivided Quaternary alluvium (which is primarily of Holocene age) is of low paleontological sensitivity. Therefore, earthmoving activities in these rock formations would have **no impact** on unique paleontological resources.

Similarly, as presented in detail in Table CR-2, the Laguna, Valley Springs, Salt Springs Slate, and Gopher Ridge Volcanics rock formations, and the gabbro and metagabbro of the Foothills Mélange are either of no or low paleontological sensitivity. Therefore, the proposed project facilities (i.e., switchyard, solar panels, and access roads) that would be constructed in these rock formations would result in **no impact** on unique paleontological resources.

The Mehrten, Ione, and Chico Formations at the project site are of high paleontological sensitivity due to the large number of vertebrate fossils and plant fossil assemblages that have been recovered from these formations in the Central Valley (see Table CR-2). All three of these formations are exposed at the surface within the project site and extend beneath the surface to depths of up to several hundred feet. Therefore, earthmoving activities during construction or decommissioning in these three formations, which are present in the project site where solar panels are proposed, as well as the substation, BESS, maintenance yard, and site access roads south and east of the Prairie City SVRA, could result in accidental damage to or destruction of unique paleontological resources. Therefore, this impact is considered **potentially significant.**

Mitigation Measures

CR-4. Avoid Impacts to Unique Paleontological Resources.

Prior to the start of earthmoving activities associated with the proposed substation, BESS, maintenance yard, solar panels, and all proposed access roads south and east of the Prairie City SVRA, the project applicant shall do the following:

1. 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 and Sacramento County.

3. If paleontological resources are discovered during earthmoving activities, the project applicant shall retain a qualified paleontologist to evaluate the resource and prepare and implement 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 Sacramento County for review and approval. 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-4 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.

9 HAZARDS AND HAZARDOUS MATERIALS

INTRODUCTION

This chapter describes the environmental setting and regulatory background related to hazards and hazardous materials at the project site, as well as off-site conditions that could affect on-site development, and identifies and analyzes impacts related to these issues from implementation of the proposed project. Impacts related to hazardous emissions (i.e., toxic air contaminants) are evaluated in Chapter 5, "Air Quality."

ENVIRONMENTAL SETTING

EXISTING AND PAST USES OF THE PROJECT SITE AND NEARBY LANDS

Portions of the project site were used for surface mining prior to 1937. Dredging operations occurred on the northwestern portion of the project site, and small-scale gold and silver placer mining operations were conducted on the southern portion of the project site. A ranch has been located on the project site for over 80 years, with associated cattle grazing; agricultural development associated with the ranch occurred from 1952 to 1964. Three other small ranches/homesteads were located on the project site from at least 1937 to 1966, and included use of the land for grazing and row crops (Dudek 2021).

Most of the northwestern corner of the project site is occupied by California State Parks (State Parks) for activities associated with the Prairie City State Vehicular Recreation Area (SVRA), including the Maintenance Yard, Communications Office, and refueling area; the SVRA's groundwater well, water treatment plant, water storage tank, electrical plant, and sewage treatment facilities; the Environmental Training Center; a flat track, go-cart track building and parking, and the American Quarter Midget Association building, track, and parking. In the 1950s and 1960s, this area of the project site was part of a larger area of land owned by Aerojet General Corporation to develop and test solid and liquid fueled rocket propulsion systems for the federal government.

North of the project site, on the north side of White Rock Road, Aerojet currently operates a 40-acre solar farm in partnership with Solar Power, Inc. and the Sacramento Municipal Utility District (SMUD). Aerojet's solar farm encompasses 22 arrays that generate 6 MW of power, which is used to offset more than 20 percent of Aerojet's energy demand to operate its groundwater remediation program (USEPA 2010).

HAZARDOUS MATERIALS

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. Federal regulations define a hazardous material as "a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (Code of Federal Regulations Title 49, 171.8]). Section 25501(n) of the California Health and Safety Code defines a

hazardous material as "…any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment." Hazardous materials include, but are not limited to: hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Section 25141(b) of the California Health and Safety Code defines "hazardous wastes" as wastes that:

> …because of their quantity, concentration, or physical, chemical, or infectious characteristics [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [or] pose a substantial present or potential hazard to human health or the environment … when improperly treated, stored, transported, disposed of, or otherwise managed.

A Recognized Environmental Condition means the presence or likely presence of any hazardous substances or petroleum products on the project site under conditions that indicate an existing release, a past release, or a material threat of a future release into the ground, groundwater, or surface water.

Phase I Environmental Assessment

In 2021, Dudek was retained to prepare a Phase I Environmental Site Assessment (ESA) for the 2,704-acre project site to evaluate the potential presence of any Recognized Environmental Conditions. During a site reconnaissance visit conducted by Dudek in 2021, a variety of existing features were noted on the project site, as presented in the bullet points below.

- Actively used ranch house along Scott Road and associated outbuildings including a barn and storage sheds. Typical debris associated with ranch activities (wood frames, metal posts, barbed wire, old water heaters, and limited concrete foundations) were identified around the ranch house and near a former small impoundment on Coyote Creek that created a stock watering pond. Minor quantities of petroleum products are maintained at the ranch to service the ranch equipment, but no evidence of spills or leaks was observed. There is one active and one inactive septic system in place at the ranch house. Two pole-mounted transformers were identified supporting the main ranch house and ranch house production well; the transformers were observed as being in good condition with no evidence of leaks or spills. Two above-ground propane tanks in good condition were identified at the ranch house: approximately 50 gallon and 250 gallon. The ranch has been present at the project site since at least 1937, and therefore the ranch buildings may contain asbestos and/or lead based paint (no surveys for these materials have been performed).
- Verizon cell phone tower.

- Foundations from former homesteads with associated abandoned groundwater wells.
- Several dammed cattle ponds.
- Rows of cobbles and low mounds of gravel and sand with grass on top from historical placer mining.
- Groundwater extraction and treatment (GET) wells, and groundwater monitoring wells, associated with the Aerojet contaminated groundwater plume.
- Three groundwater production wells with standard casings, pumps, and wellheads. These wells extended directly west from the main ranch house out into, and across, Coyote Creek. Two of these wells near the ranch house are currently not operational. The 35-foot-deep well located within the floodplain of Coyote Creek is the current active well for the ranch house.

Beginning in the 1950s, the northwestern portion of the project site and the adjacent property to the north and east were acquired and later used by Aerojet General Corporation and other companies to test fueled propellant rocket engines for the federal government (as discussed in detail below). In the early 1970s, 435 acres were leased from Aerojet by Roy and Mary McGill, who created a motorcycle riding and competition facility called McGill's Cycle Park. Sacramento County purchased the land in 1975 with funds from State Parks' Off-Highway Vehicle Program. Additional land was purchased in 1976, 1988, 2004, and 2014. Sacramento County turned the park over to State Parks' Off-Highway Motor Vehicle Recreation Division in 1988, to be operated as the Prairie City SVRA (California State Parks 2016). Some of the project's improvements are proposed to be installed along the existing SVRA access road adjacent to State Parks' Maintenance Yard, Communications Office, and refueling area; and the SVRA's groundwater well, water treatment plant, water storage tank, electrical plant, and sewage treatment facilities.

The Prairie City SVRA is registered as a Small Quantity Generator of hazardous waste with the California Department of Toxic Substances Control (DTSC). Hazardous materials that may be stored in the maintenance yard at Prairie City SVRA include unleaded gasoline, diesel fuel, oil, and tires to be recycled. Gasoline and diesel fuel are stored in one aboveground tank separated in two 500-gallon sections. Hazardous materials are collected annually by a hazardous materials recycler. Every employee who handles these materials receives training and education. Safety meetings are held at Prairie City SVRA biweekly for maintenance staff members and bimonthly for support staff members (California State Parks 2015).

The Phase I ESA included a site reconnaissance of the Prairie City SVRA facilities on the north side of the project-related improvement area along the existing SVRA access road. No Recognized Environmental Conditions were noted associated with the existing State Parks facilities (Dudek 2021).

Aerojet Contaminated Groundwater Plume

Aerojet (now Aerojet Rocketdyne Holdings Inc.) has owned and operated a facility to develop and test liquid and solid propellant rocket engines for aerospace activities in

Rancho Cordova since the early 1950s. A portion of the land was sold to the Douglas Aircraft Company in 1961, which constructed numerous structures at seven aerospace complexes and used other small undeveloped areas for small-scale testing and to burn waste propellant (i.e., the Inactive Rancho Cordova Test Site [IRCTS]). Aerojet reacquired the IRCTS in 1982. In addition, the Cordova Chemical Company operated chemical manufacturing facilities on the Superfund site from 1974 to 1979. Most of the land owned by Aerojet and the Douglas Aircraft Company was undeveloped and served as buffer lands. Approximately 5,900 acres of the Aerojet property were designated as a Superfund site by the U.S. Environmental Protection Agency (USEPA) in 1983. The Aerojet Superfund site is also on the Cortese list (discussed further below). Previous activities conducted within the Aerojet Superfund site included manufacturing and testing of solid rocket motors and liquid rocket engines, chemical manufacturing, and disposal of associated chemicals, solvents, propellants, fuels, oxidizers, metals, and explosives.

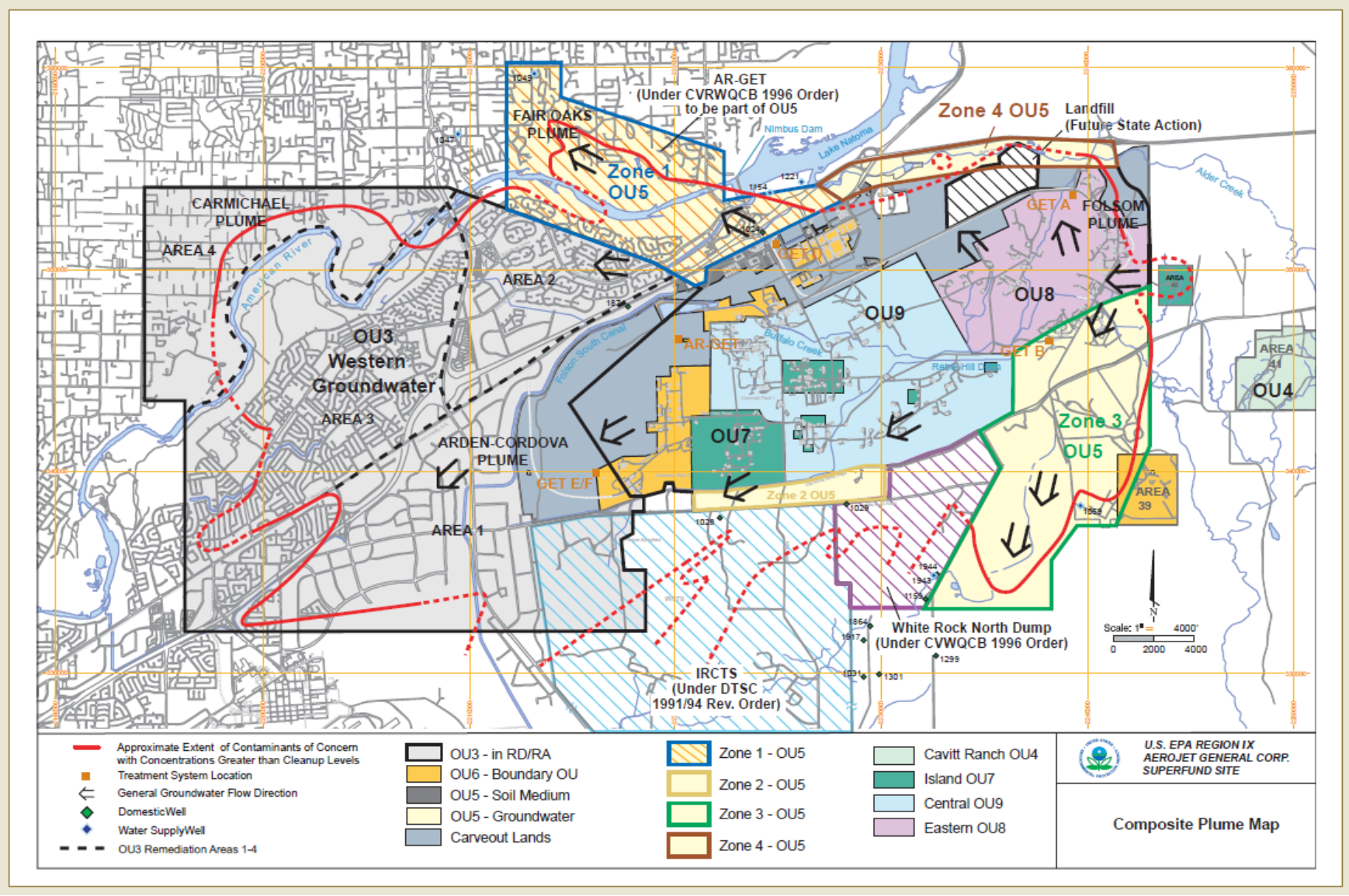
In 1989, Aerojet, USEPA, the Central Valley Regional Water Quality Control Board (RWQCB), and DTSC entered into a partial consent decree. This agreement established procedures and obligations to achieve the goals listed in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (generally referred to as Superfund) and the National Oil and Hazardous Substances Pollution Contingency Plan. Aerojet leads the groundwater and soil cleanup efforts, and actively consults with the federal, state, and local water agencies and a Community Advisory Group for Aerojet Superfund issues. Overseeing agencies monitor a large number of groundwater monitoring wells and require that the effectiveness of the groundwater containment system be evaluated regularly.

In July 1998, the partial consent decree was modified to remove certain areas (referred to as “carve-out” lands) from the Aerojet Superfund site and divide the Superfund site into operable units (OUs) to facilitate completion of remedial investigation/feasibility studies (see Plate HAZ-1). The OUs allowed Aerojet and the regulatory agencies to prioritize investigation and cleanup work. Before any portion of the Aerojet Superfund site can be made available for new uses, USEPA must issue a Record of Decision (ROD) or similar certification indicating that remedial actions have been completed, and that no unacceptable risks would be posed to human health or the environment.

In the vicinity of the project site, the Superfund site boundary is north of White Rock Road (approximately 1 mile from the proposed switchyard), except for the area shown in Plate HAZ-1 and Plate HAZ-2 as Zone 3 OU5, which is south of White Rock Road (approximately 0.8 of a mile west of the western end of the project’s proposed access road).

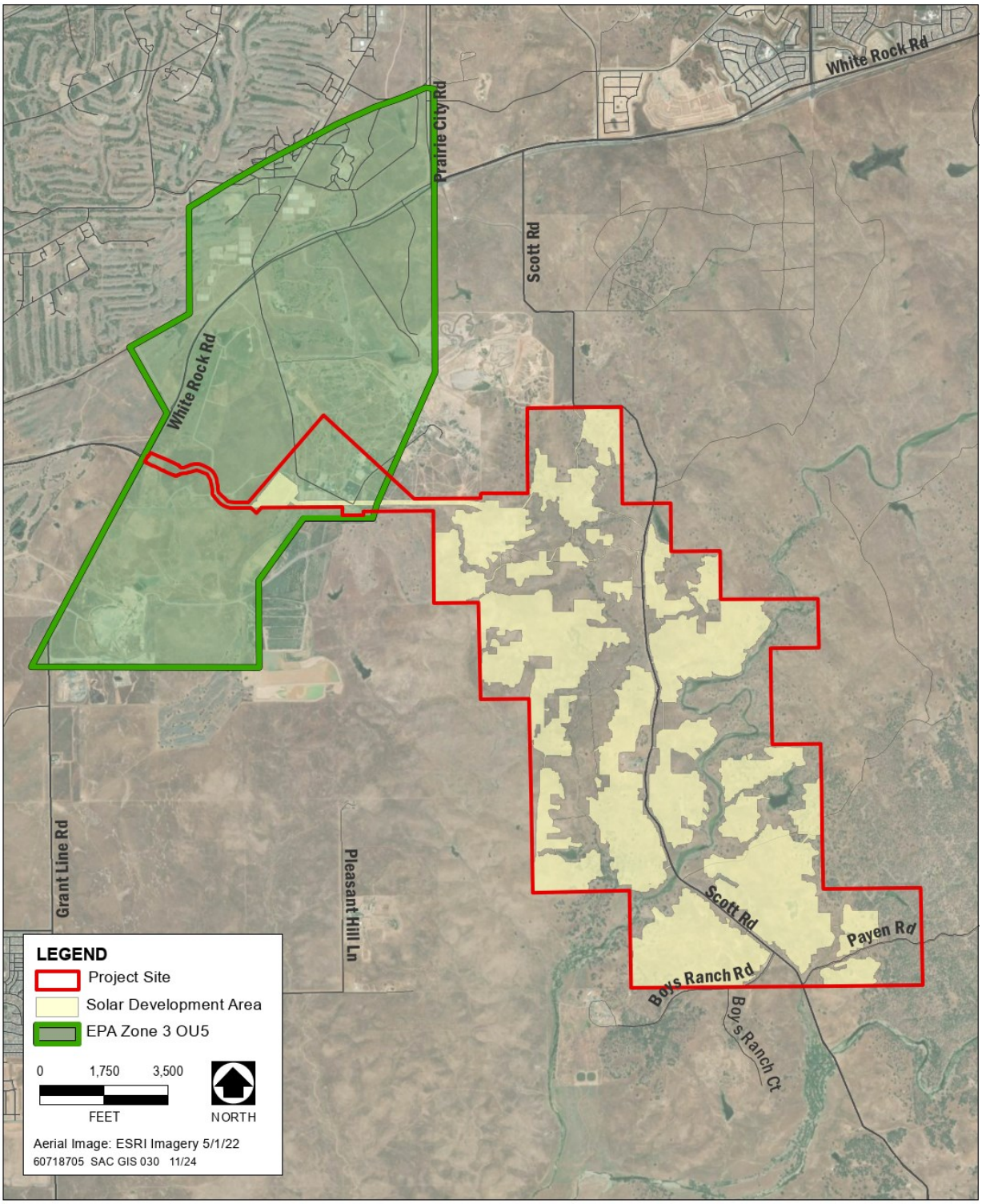
USEPA conducts a formal public review of the Superfund cleanup activities every five years. USEPA updated its most recent *Overview Report for the Aerojet General Superfund Site* in 2021 (USEPA 2021).

Plate HAZ-1: Aerojet Superfund Site and Operable Units



Source: USEPA 2006

Plate HAZ-2: Aerojet Superfund Site and Operable Units within the Project Site



Source: Dudek 2024b, EPA 2021

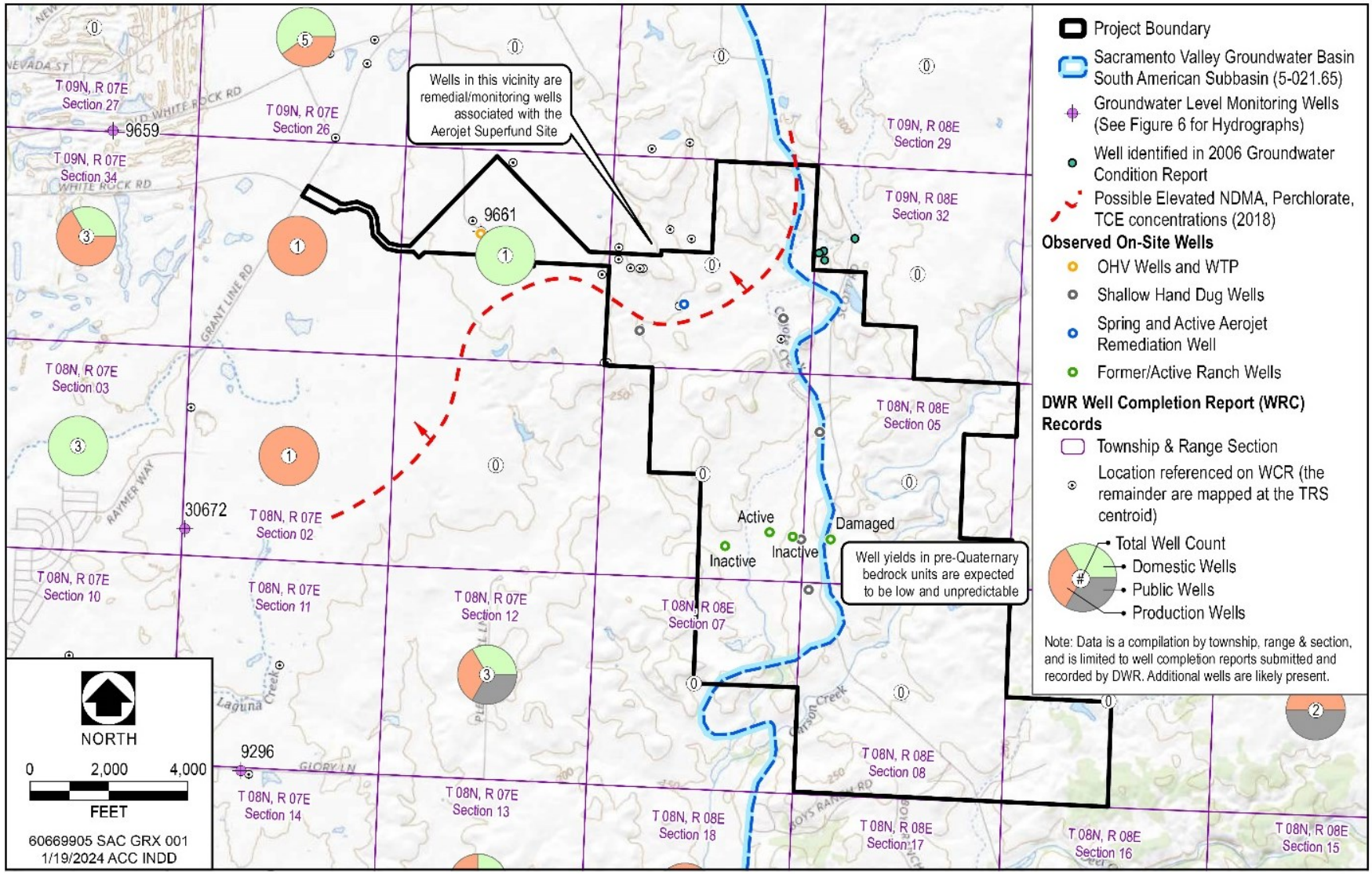
PERIMETER GROUNDWATER OPERABLE UNIT (OU-5)

In August 2002, USEPA and the Central Valley RWQCB issued parallel orders to Aerojet to begin or expand critical work to achieve full containment of contaminated groundwater on the north and south sides of the Aerojet property and to prevent groundwater contamination from continuing to flow off Aerojet's property. Aerojet was directed to conduct a remedial investigation/feasibility study for the Perimeter Groundwater Operable Unit (OU-5) to address the groundwater contamination and investigate more than two dozen potential soil source areas located within Aerojet's perimeter development plans. Contaminated drinking-water wells above the response levels were subsequently removed from service. (The response level is the concentration at which the California Department of Public Health recommends removing a drinking-water source from service.) USEPA signed and adopted a ROD for OU-5 in February 2011, memorializing the plan to contain and treat contaminated groundwater within and outside of moving off the Aerojet property. The approach includes a system to pump groundwater at the outer edge of the plume to prevent further spread of contaminated groundwater. Existing treatment systems (GET) are located within the Aerojet site north of White Rock Road, as well as various locations south of White Rock Road within and near the northern portion of the project site (USEPA 2021).

The northwestern portion of the project site overlies a portion of the Perimeter Groundwater Operable Unit (OU-5), Zone 3 (see Plate HAZ-1, Plate HAZ-2, and Plate HAZ-3). The most prevalent constituents of concern that exceed regulatory thresholds in the groundwater plume consist of perchlorate, N-Nitroso dimethylamine (NDMA), trichloroethene (TCE), and tetrachloroethene (PCE) (USEPA 2021). The majority of groundwater monitoring wells show decreasing concentrations of contaminants. Human health is currently protected through groundwater containment via extraction, institutional controls, and contingency plans that are in place to protect public drinking water wells. A vapor intrusion investigation program was initiated at the Superfund site in 2016; off-property buildings were determined to be not at risk from vapor intrusion (USEPA 2021)

Institutional controls in the form of deed restrictions, which include restrictions on the use of groundwater (no groundwater extraction, groundwater recharge, or temporary pumping of groundwater for excavation of buildings is allowed without prior consultation and written permits from USEPA and the Central Valley RWQCB), are currently in place on Aerojet property. Groundwater use within the Perimeter Groundwater OU but not within the Aerojet property is prohibited by Sacramento County (without prior consultation and written permits) for areas within the County-designated Aerojet Special Planning Area (Sacramento County 2021), which includes the western third of the proposed switchyard area and the proposed access road west of the switchyard (Dudek 2021). The Sacramento County Environmental Management Department (EMD) manages a "Consultation Zone" for new wells that requires all parties to consult with the Central Valley RWQCB prior to drilling a well within 2,000 feet of the groundwater plume emanating from the Aerojet Superfund site (Sacramento County Code Chapter 16.28).

Plate HAZ-3: Aerojet Contaminated Groundwater Plume in the Project Vicinity



Source: Dudek 2024a; adapted by AECOM in 2024

The Aerojet contaminated groundwater plume (Perimeter OU-5, Zone 3) represents a Recognized Environmental Condition for the project site. Plate HAZ-2 depicts the project site relative to OU-5, Zone 3.

The California Department of Water Resources (DWR) reported that the approximate depth to groundwater in the vicinity of the north and northwestern portions of the project site, near the Aerojet contaminated groundwater plume, was approximately 150 feet in the Spring of 2023 (DWR 2024). Shallow groundwater encountered in the soil borings for the site-specific geotechnical report consisted of perched groundwater above an impermeable soil layer, and therefore was not indicative of the actual groundwater table at the project site (Terracon Consultants, Inc. 2021). The shallow, perched groundwater is based on seasonal rainfall conditions and is not contaminated.

CORTESE-LISTED HAZARDOUS MATERIALS SITES

As part of the Phase I ESA, Dudek retained the services of EDR, Inc. to perform a search of over 90 federal, state, and tribal databases related to hazardous materials, including the databases that are maintained under California Public Resources Code Section 65962.5 (i.e., the "Cortese List").

Other than the Aerojet contaminated groundwater plume discussed above, there were no other hazardous materials sites within the project site on the Cortese listed databases. However, there are two other known Cortese-listed hazardous materials sites near the project site, which are briefly described below.

- **Sacramento County Boys Ranch.** This Cortese-listed site is approximately 850 feet southwest of the southern end of the project site, located at 14049 Boys Ranch Road. This site is a former youth correctional facility with an on-site wastewater treatment facility which operated from 1960 to 2010. Violations related to sewer overflow were documented in 1999 and 2001. In addition, the site also included a chemical storage facility and violations were noted related to improper reporting. A release of gasoline to soil was reported in 1990 and received regulatory closure in 1991. Based on the topographic location of the former Sacramento County Boys Ranch (lower than the project site) and the fact that only the soil was affected not groundwater, Dudek (2021) concluded that the reported violations would not have resulted in a Recognized Environmental Condition for the project site.

- **White Rock Dump North.** This Cortese-listed site is located at the northwest corner of White Rock Road and Grant Line Road (see Plate HAZ-1), approximately 0.65-mile northwest of the proposed switchyard, and approximately 450 feet north of the western end of the proposed project site access road. White Rock Dump North is a closed Class III landfill (intended for disposal of non-hazardous solid waste). The site is a 242-acre parcel that was authorized for operation from 1958 to 1964 by the North American Waste Disposal Company for waste generated in unincorporated Sacramento County. Aerojet also disposed of wastes at this site, including waste that contained TCE. Dumping reportedly continued into the 1970s, past the landfill closure date. Various types of refuse were placed between piles of dredge tailings and covered with adjacent dredged material, and liquid waste was

disposed of in a former 1-acre pond area (DTSC 2024, Central Valley RWQCB 2023). A 1995 preliminary endangerment assessment for the site indicated that underlying groundwater contained several types of VOCs and SVOCs. The direction of groundwater flow from this hazardous materials site is towards the southwest (away from the project site). By 2007, the Central Valley RWQCB had a cleanup and abatement order in place for this site. In 2023, the Central Valley RWQCB issued an updated Cleanup and Abatement Order R5-2023-0700 for the White Rock Dump North (Central Valley RWQCB 2023). Aerojet operates a GET system at the former dump to keep the contaminated groundwater plume from migrating off the site. In addition, the Sacramento County Environmental Management Department serves as the local enforcement agency, and inspects the landfill for compliance with closure requirements (DTSC 2024).

A portion of the former White Rock Dump North has recently been approved for use as a new Class II Waste Management Unit called the Aerojet Waste Consolidation Unit (AWCU). The AWCU will receive non-hazardous, contaminated soil and inert construction debris generated from the clean closure of an existing Class III landfill located within Aerojet-owned property in eastern Sacramento County and from soil remediation activities conducted in accordance with CERCLA remedial actions at the Aerojet Superfund site. Non-hazardous soils will likely contain metals, PCBs, dioxins, perchlorate, SVOCs, and VOCs at concentrations requiring disposal at a Class II facility. Waste Discharge Requirements and a Monitoring & Reporting Program for the AWCU have been adopted by the Central Valley RWQCB. The AWCU will act as a final closure cover for up to approximately 50 acres of the approximately 100 acres of landfilled area. Following closure of the AWCU, the portion of the landfilled area that is not covered by the AWCU will be capped and closed (Central Valley RWQCB 2023).

Although a GET system is operating to remediate the contaminated groundwater plume from the former White Rock Dump and the direction of groundwater flow is to the southwest (away from the project site), the White Rock Dump may represent a Recognized Environmental Condition for the project site due to the close proximity of the dump's groundwater plume to the western end of the project site (Dudek 2021).

In 2024, AECOM performed an updated site-specific search of several databases maintained as part of the Cortese List. The Hazardous Waste and Substances Site List (the "EnviroStor" database) is maintained by the California DTSC (DTSC 2024) as part of the requirements of Public Resources Code Section 65962.5. The State Water Resources Control Board (SWRCB 2024) maintains the GeoTracker database, an information management system for groundwater. Data on leaking underground storage tanks and other types of soil and groundwater contamination, along with associated cleanup activities, are part of the information that the SWRCB must maintain under Public Resources Code Section 65962.5. AECOM also performed a search of the USEPA's Superfund database (which includes records maintained under CERCLA) (USEPA 2024).

The results of these records searches in 2024 indicated there are no new hazardous materials sites with a potential to affect the proposed project other than those already reported in the Phase I ESA and discussed above.

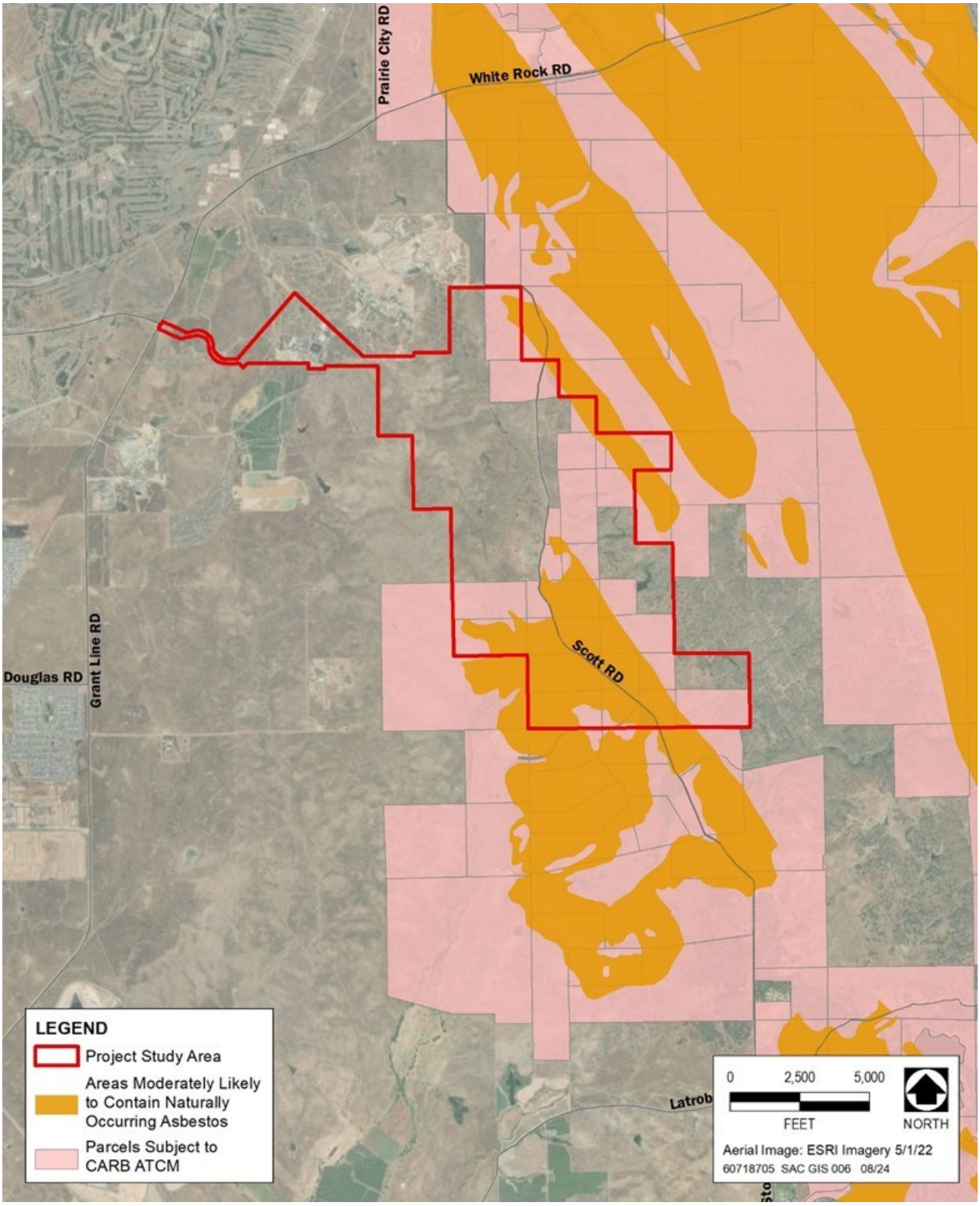
Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) is a term applied to several types of naturally occurring fibrous materials found in rock formations throughout California. Exposure and disturbance of rock and soil (e.g., during earthmoving activities such as excavation and grading) that contains asbestos can result in the release of asbestos fibers to the air. Subsequent inhalation of these fibers can result in serious public health risks such as mesothelioma and lung cancer. Asbestos is commonly found in several types of ultramafic rock, particularly serpentine, which are not present in eastern Sacramento County. However, asbestos can also be found in other types of metamorphic as well as igneous rocks that have undergone periods of deformation, which are present in eastern Sacramento County, as well as in areas where fault zones are present. All types of asbestos are now considered hazardous to human health.

To reduce exposure to asbestos when these soils are disturbed, the California Air Resource Board (CARB) adopted the Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations in 2002. This statewide regulation is applicable to grading or any other projects disturbing soil in areas of California where asbestos may exist, as determined by the California Geological Survey (CGS). The ATCM applies to any size construction project although there are additional notification requirements for projects that exceed one acre.

In 2006, CGS prepared Special Report 192, *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California* (Higgins and Clinkenbeard 2006). Based on Special Report 192, the project site is located within areas categorized as moderately likely and least likely to contain NOA (Higgins and Clinkenbeard 2006). Based on the results of Special Report 192, the Sacramento Metropolitan Air Quality Management District (SMAQMD) created a map of parcels in eastern Sacramento County that are directly subject to ATCM requirements, and parcels that may contain NOA and therefore could be subject to ATCM requirements (SMAQMD 2017). As shown in Plate HAZ-4, portions of the project site are moderately likely to contain NOA and have already been delineated by SMAQMD as parcels that are subject to CARB's ATCM for Construction, Grading, Quarrying and Surface Mining Operations (shown in pink on Plate HAZ-4), unless it is demonstrated by a geotechnical report that NOA is not present. Other areas of the project site may also contain NOA (shown in orange on Plate HAZ-4), and if so, would also be subject to the ATCM. Therefore, the project would be subject to the ATCM unless it is demonstrated by a geotechnical report that NOA is not present.

Plate HAZ-4: Likelihood of Naturally Occurring Asbestos in the Project Vicinity



Source: SMAQMD 2017

Prior to any construction, owners or operators must either "test out" of the ATCM requirements by providing SMAQMD with a geologic evaluation demonstrating that NOA is not present or apply for an Asbestos Dust Mitigation Plan. Plans and requests for geologic evaluations must be submitted to SMAQMD for review and approval. SMAQMD also performs periodic site inspections during construction to ensure that approved Asbestos Dust Mitigation Plans are being implemented (SMAQMD 2017). Refer to Chapter 5, "Air Quality" for additional information related to NOA.

Airports

The privately-owned Rancho Murieta Airport is approximately 4.5 miles south of the project site. Rancho Murieta Airport does not have a control tower. It has two lighted asphalt runways that are approximately 3,800 feet and 1,150 feet long, respectively. In 2023, there were 22 aircraft based at the field, and there were approximately 22 flights per day averaged over the 12-month period (AirNav 2024a).

The Rancho Murieta Airport does not have an Airport Land Use Compatibility Plan (ALUCP). Land use compatibility and associated hazards for the Rancho Murieta Airport are determined by the Sacramento Airport Land Use Commission (ALUC) 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). 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).

The runways at the publicly-owned Sacramento Mather Airport are approximately 6.3 miles southwest of the project's proposed switchyard, and approximately 7.3 miles southwest of the proposed substation. 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 jets (AirNav 2024b).

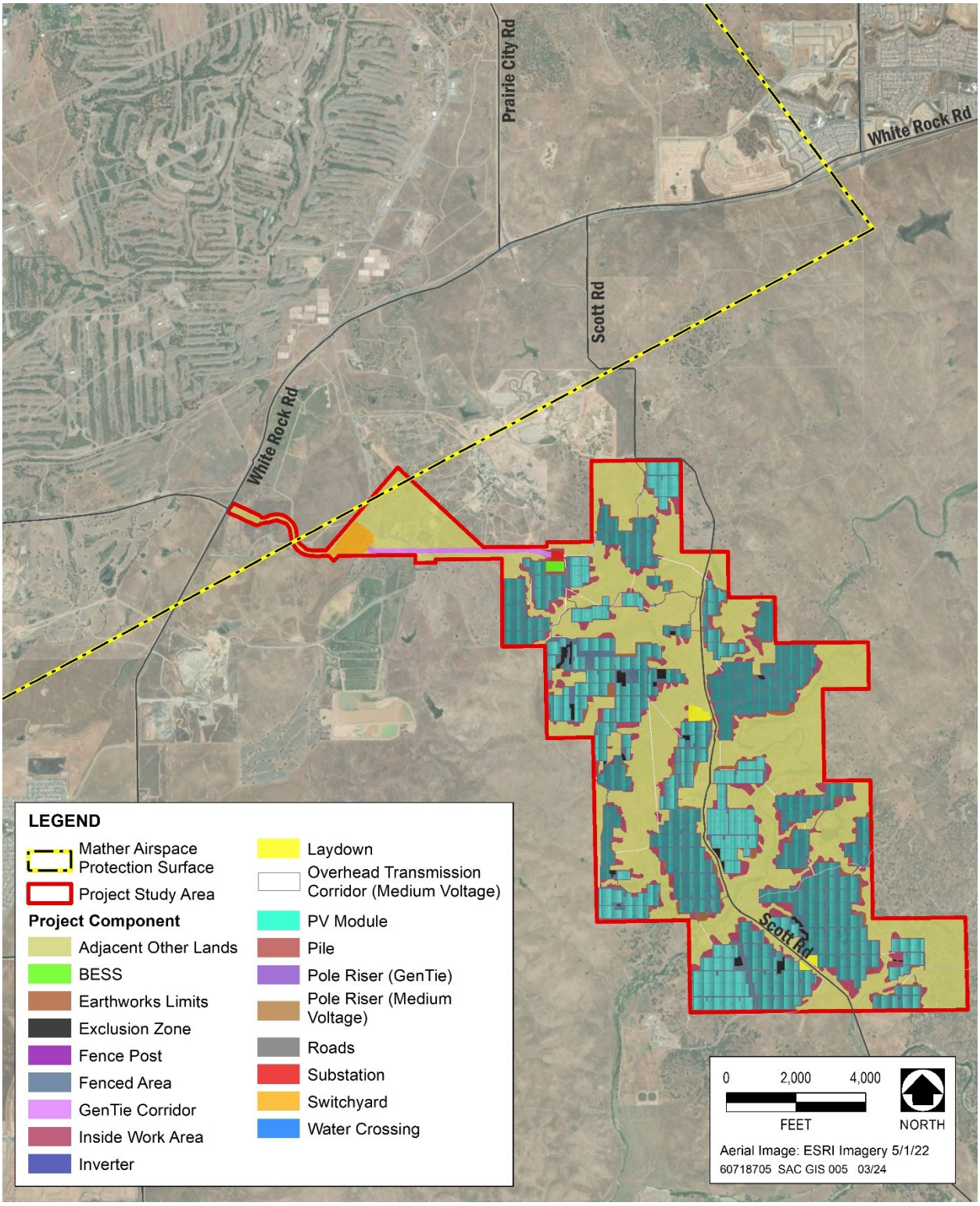
The project site is within the Mather Airport Influence Area (AIA), Review Area 2, as delineated in the Mather Airport ALUCP. Review Area 2 of the AIA is composed of airspace protection areas and the overflight notification area. These areas are: (1) beneath the 14 Code of Federal Regulations (CFR) Part 77 Subpart B imaginary airspace

surfaces; (2) within the overflight notification boundary; and (3) within the 10,000-foot airport operations area buffer wildlife hazards analysis area (Environmental Science Associates 2022). Each of these areas are discussed separately below.

- Tall structures, trees, other objects, or high terrain on or near airports may constitute hazards to aircraft in flight. Federal regulations contained in 14 CFR Part 77 establish the criteria for evaluating potential obstructions. These regulations require that the Federal Aviation Administration (FAA) be notified of proposals related to the construction of potentially hazardous structures. As shown in Plate HAZ-5, the proposed switchyard and gen-tie route, which would include facilities ranging from 100 to 150 feet tall, would be immediately adjacent to, but outside of, the Mather Airport's 14 CFR Part 77 Airspace Protection Surfaces boundary. The proposed substation, which would include facilities up to 150 feet tall, would be approximately 0.75 mile southeast of the Airspace Protection Surfaces boundary (Plate HAZ-5).
- The entire project site is within Mather Airport's Overflight Notification Area (ESA Airports 2022: Figure 4-9). An overflight notification document must be recorded for any local agency approval of residential land use development within the overflight notification area. The proposed project does not include residential development.
- The project site is approximately 30,000 feet northeast of Mather Airport, and therefore is well outside of the airport's 10,000-foot boundary where a wildlife hazards analysis would be required (ESA Airports 2022: Figure 4-8).

Other land uses that may present airport safety hazards, which may be allowed within the AIA only if the proposed land uses are consistent with FAA rules and regulations, include substantial sources of glare (such as from mirrored or other highly reflective buildings or building features). A glare analysis for the project's proposed solar panels has been performed, the results of which are presented in Chapter 3, "Aesthetics," of this EIR and analyzed in Impact AE-4.

Plate HAZ-5: Mather Airspace Protection Surface Boundary



Sources: Environmental Science Associates 2022, Dudek 2024c, and adapted by AECOM 2024

Fire Hazards

Wildland Fire Hazards

Public Resources Code Sections 4201–4204 and Government Code Sections 51175–51189 require identification of fire hazard severity zones within the State of California. 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. In State Responsibility Areas, the California Department of Forestry and Fire Protection (CAL FIRE) is required to delineate three potential wildfire hazard ratings: moderate, high, and very high. These classifications indicate "hazard" not "risk." CAL FIRE's fire "hazard" rating is based on the physical conditions that create a likelihood for wildfire in combination with expected fire behavior, over a 30- to 50-year period (without considering measures such as home hardening, recent wildfires that have burned vegetation, or fuel reduction efforts).

The project site is within a State Responsibility Area; most of the project site is designated by CAL FIRE as Moderate Fire Hazard Severity Zone with a portion of the southeastern area designated as a High Fire Hazard Severity Zone (CAL FIRE 2024). Please see Chapter 15, "Wildfire," of this EIR for a detailed discussion and analysis of impacts related to wildland fire hazards.

Battery Energy Storage Systems (BESS)-Related Fire Hazards

The operation of the BESS includes a risk of a thermal runaway event (fire) resulting in air emissions including releases of flammable gases and hazardous pollutants. A BESS system fire poses potentially significant risks to emergency responders. In January 2025, a significant BESS fire occurred at the Pacific Gas and Electric power plant in Moss Landing, California. The Moss Landing BESS where the fire occurred utilized an older generation of nickel manganese cobalt (NMC) battery chemistry, was packed into a single building, and used large-scale air-cooling systems. While Moss Landing has experienced multiple high temperature incidences, including the recent fire, overall BESS technology has changed since the development of Moss Landing, and codes and standards have also changed since the development of the Moss Landing facility. From 2018 to 2022, BESS failures dropped from 9.2 failures per gigawatt to approximately 0.2 failures per gigawatt in 2023 (EPRI 2024).

The equipment selection, site design, and operation of the BESS are subject to state and national fire prevention regulations standards to prevent the risks of thermal runaway events. The current required safety approach includes site-specific emergency response plans, hazard mitigation analysis, and first responder training to minimize risks to first responders and the public. Safety standards for BESS facilities have been through several code cycle updates since the design of the Moss Landing Facility. Product designs include several generations of improved cell and module manufacturing, chemistry, liquid cooling technology, battery management software, testing, and site design criteria to reduce or eliminate propagation of fire. Some of the advances that would be utilized for the project include standards and regulations described under "Current BESS Safety Standards" in the "Regulatory Setting" Section below.

The BESS system for the proposed project would be monitored and managed 24 hours per day and 7 days a week by the Battery Management Systems (BMS) software to automatically report to a remote operator to prevent conditions that can lead to a fire. The BMS would monitor abnormalities outside of safe operating parameters of voltage, state of charge, and state of health or temperature, and it would shut down the unit (segregated battery containers) and/or block of units and alert the operator should any abnormal parameters be identified. The BESS would also have secondary manual controls on-site. Fire alarm control panels with dedicated back up power would be installed and evaluated to ensure they are placed at a safe distance from the BESS units in order to provide real time critical information to first responders.

As with many power generation and storage systems, fire risk cannot be entirely eliminated, and the procedures identified above have been developed in the unlikely scenario of a fire. The current design standards provide that that segregated battery containers (units) include setbacks from one another and from the perimeter of the site. The separated units would be located on a gravel pad or elevated on piers so as not to pose a risk to combustion of organic matter in the surrounding area. These standards, along with the installation protocols developed by each manufacturer, would ensure that in an unlikely scenario where a fire occurs, only a single unit of the BESS system would be put at risk, and that a fire would not spread across the entirety of the site.

In the unlikely scenario where a BESS unit catches fire, the battery within the unit itself may take approximately 6-12 hours to fully burn out. An additional 24 hours following burnout would be applied to allow for the system to cool itself. It is generally advised that water not be applied to a BESS unit in thermal runaway, and these specifications, dependent on final manufacturer selected, would be specified in the project emergency response plan in coordination with local first responders (see Mitigation Measure HAZ-1, below, for more information). In the case of a fire, liquids, and pollutants have the potential for release:

- The project's BESS units are designed with primary and secondary containment for liquids so that even under intense heat scenarios, any liquids released from the batteries are fully contained within the unit. No firefighting water would be added directly to the unit to reduce the risk of chemical leaching into adjacent water features. Following a thermal runaway event, a thorough evaluation of the underlying BESS pad would be completed to determine any localized cleanup. Prior to disposal, chemical testing would be completed to determine proper disposal methods.
- It is anticipated that air pollution would be created in the event of a fire. First responders, project representatives, and officials directly at the scene shall wear respirators in case of fire as that is the area where emissions are the most concentrated. Other projects in nearby jurisdictions have analyzed BESS emissions in the case of a fire (i.e. thermal runaway). The Juniper Creek Energy Storage Project in Rancho Cordova, which would utilize similar technology to the proposed project, analyzed BESS emissions for a 200 MW BESS in the case where a single unit experiences a thermal runaway via the completion of a Health

Risk Assessment. The Health Risk Assessment concluded that “a thermal runaway of a cell or module would be considered a low-priority risk and thus would result in a less than significant impact” (City of Rancho Cordova 2023).

REGULATORY SETTING

FEDERAL

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, as well as requiring measures to prevent or mitigate injury to health or the environment if such materials are accidentally released. The USEPA is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials.

MANAGEMENT OF HAZARDOUS MATERIALS

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, and require implementation of cleanup measures if such materials are accidentally released. The USEPA is the agency primarily responsible for enforcing and implementing federal laws and regulations regarding hazardous materials. Applicable federal regulations pertaining to hazardous materials are contained mainly in CFR Titles 29, 40, and 49. Hazardous materials, as defined in the code, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws, among others:

- The Toxic Substances Control Act of 1976 (Title 15, Section 2601 and following sections of the U.S. Code [15 USC 2601 et seq.]) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials.
- The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) established an all-encompassing federal regulatory program for hazardous substances that is administered by EPA. Under the Resource Conservation and Recovery Act, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances.
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.) created a trust fund to provide broad federal authority for releases or threatened release of hazardous substance that could endanger public health or the environment.
- The Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499; 42 USC 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), establishes requirements for federal, state, and local governments, Indian Tribes, and

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

The Emergency Planning Community Right-to-Know Act of 1986 was included under the SARA law and is commonly referred to as SARA Title III. The Act was passed in response to concerns regarding the environmental and safety hazards proposed by the storage and

handling of toxic chemicals. The Act establishes requirements for federal, state, and local governments, Indian Tribes, and industry regarding emergency planning and Community Right-to-Know reporting on hazardous and toxic chemicals. SARA Title III requires states and local emergency planning groups to develop community emergency response plans for protection from a list of Extremely Hazardous Substances (40 CFR Appendix B). The Community Right-to-Know provisions help increase the public's knowledge of and access to information on chemicals at individual facilities, their uses, and their release into the environment.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act of 1975 was created to provide adequate protection from the risks to life and property related to the transportation of hazardous materials in commerce by improving regulatory enforcement authority of the Secretary of Transportation.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration is the federal agency responsible for enforcing and implementing federal laws and regulations pertaining to worker health and safety. The administration's Hazardous Waste Operations and Emergency Response regulations require training and medical supervision for workers at hazardous waste sites (29 CFR Section 1910.120). Additional regulations have been developed regarding exposure to lead (29 CFR Section 1926.62) and asbestos (29 CFR Section 1926.1101) to protect construction workers.

State

Senate Bill 38: Emergency Response and Emergency Action Plans for BESS Facilities

Refer to text under the "Current BESS Safety Standards" Section, below, for additional information regarding SB 38.

California Department of Toxic Substances Control

The DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the management of hazardous materials and the generation, transport and disposal of hazardous waste under the authority of the Hazardous Waste Control Law. Since August 1, 1992, DTSC has been authorized to implement the state's hazardous waste management program for CalEPA.

State Water Resources Control Board

The SWRCB was established in 1967. The Central Valley RWQCB is authorized by the SWRCB to enforce provisions of the Porter-Cologne Water Quality Control Act of 1969. This act gives the Central Valley RWQCB authority to require groundwater investigations

when the quality of groundwater or surface waters of the state is threatened and to require remediation of the site, if necessary.

California Occupational Safety and Health Administration

California Occupational Safety and Health Administration (CalOSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. Regulations pertaining to the use of hazardous materials in the workplace (Title 8 of the California Code of Regulations [CCR]) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. CalOSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous-waste sites. The hazard communication program requires that employers make Safety Data Sheets available to employees, and requires documentation of informational and training programs for employees.

The CalOSHA regulations also include requirements for protective clothing, training, and limits on exposure to hazardous materials. CalOSHA also enforces occupational health and safety regulations specific to lead and asbestos investigation and abatement. These regulations equal or exceed their federal counterparts. Specific worker safety measures for excavation hazards (e.g., falling or cave-in of excavation walls) are described in Title 8 CCR Section 1541.

Senate Bill (SB) 1082 – California Environmental Protection Agency's Unified Program

In 1993, SB 1082 gave CalEPA the authority and responsibility to establish a unified hazardous waste and hazardous materials management and regulatory program, commonly referred to as the Unified Program. The purpose of this program is to consolidate and coordinate six different hazardous materials and hazardous waste programs, and to ensure that they are consistently implemented throughout the state. The Unified Program is overseen by CalEPA with support from DTSC, the nine RWQCBs, the Office of Emergency Services (OES), and the State Fire Marshal. The six programs are:

- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- California Accidental Release Prevention Program
- Underground Storage Tank Program
- Aboveground Petroleum Storage Act Program
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

State law requires county and local agencies to implement the Unified Program. The agency in charge of implementing the program is called the Certified Unified Program Agency (CUPA). The Sacramento County Department of Environmental Management is the designated CUPA for the County. In addition to the CUPA, other local agencies, such as the City of Rancho Cordova and the City of Folsom, help to implement the Unified Program.

Cortese List, California Government Code Section 65962.5

The provisions of Section 65962.5 of the California Government Code are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by state and local agencies to comply with CEQA's requirement to provide information about the location of hazardous-materials release sites. Government Code Section 65962.5 requires CalEPA to develop an updated Cortese List at least annually. DTSC and SWRCB are responsible for most of the information contained on the Cortese List. Other state and local government agencies, including the RWQCBs and local cities and counties, are also required to provide additional information for the Cortese List about releases of hazardous materials.

In addition, Section 65962.5 requires all project applicants to consult the Cortese List and determine whether the project site is within a hazardous materials site on the list. If so, the project applicant is required to notify the lead agency in writing prior to the issuance of a building permit, so the lead agency can determine the appropriate course of action (which generally includes environmental site assessments and site-specific remediation).

Assembly Bill 2185 and Assembly Bill 2189, Hazardous Materials Business Emergency Response Plan Program, CA Health and Safety Code Chapter 6.95

The California Health and Safety Code Chapter 6.95 (Hazardous Materials Release Response Plans and Inventory) requires qualifying businesses to prepare a hazardous materials business plan. The plan must include procedures for managing hazardous materials and hazardous waste. In addition, the plan must describe emergency response procedures and include a list of emergency spill cleanup supplies and equipment. Before an applicant may use hazardous materials at certain defined federal and/or state thresholds, the applicant must submit a Hazardous Material Business Plan to the administering agency.

California Code of Regulations, Section 93105, Title 17, Asbestos Airborne Toxic Control Measure

In 2001, the California Air Resources Board adopted the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. Disturbance of rocks and surface soils in areas known to have naturally occurring asbestos can generate asbestos concentrations that represent a potential public health hazard, requiring dust control measures. This Airborne Toxic Control Measure requires small projects that disturb one acre or less to wet the soil area to be disturbed; wet, cover, or stabilize storage piles; limit vehicle speeds; clean equipment before moving it off-site;

and clean up visible trackout on the paved public road. Large construction projects that disturb more than one acre are required to obtain an approved dust mitigation plan from SMAQMD. The plan must specify measures that would be taken to control emissions of dust and must address track out prevention and removal, disturbed surface areas and storage piles that would be inactive more than seven days, on-site vehicle traffic, active storage piles, earthmoving activities, off-site transport, post construction stabilization, and air monitoring (if required by the SMAQMD). Equipment or activities may not emit dust that is visible crossing the property line.

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The Sacramento County General Plan of 2005–2030 (Sacramento County 2017) includes the following policies related to hazards and hazardous materials that apply to the proposed project.

HAZARDOUS MATERIALS ELEMENT

Policy HM-4: The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.

Policy HM-7: Encourage the implementation of workplace safety programs and to the best extent possible ensure that residents who live adjacent to industrial or commercials facilities are protected from accidents and the mishandling of hazardous materials.

Policy HM-8: Continue the effort to prevent ground water and soil contamination.

Policy HM-9: Continue the effort to prevent surface water contamination

Policy HM-10: Reduce the occurrences of hazardous material accidents and the subsequent need for incident response by developing and implementing effective prevention strategies.

SACRAMENTO COUNTY ZONING ORDINANCE – AEROJET SPECIAL PLANNING AREA

County Zoning Ordinance Title V, Chapter 8, Article 3, Sections 508-300 through 508-316, regulates existing and proposed development within the area designated by the County as the Aerojet Special Planning Area. All existing uses are deemed permitted uses within the Special Planning Area as a matter of right requiring only the issuance of a building permit. New uses that have been designated as permitted or allowed with a conditional use permit are listed in the ordinance; additional new uses that are not listed but are of a similar nature may be allowed following review by the County Planning and Environmental Review Department. The Ordinance does not extend County regulatory oversight to activities that are carried out under federal or state oversight based on environmental laws, statutes, ordinances, rules, or regulations (e.g., Aerojet remediation activities). The ordinance is intended to provide a regulatory mechanism for making land

use decisions that maintain a safe environment in which the Aerojet property can be used. The Ordinance also includes the adopted Land Use Master Plans for future development in Glenborough at Easton, and Easton Place.

The western one-third of the proposed switchyard, and the project site access road that is proposed from Grant Line Road to the switchyard, are within the Aerojet Special Planning Area. Drilling of new groundwater wells is not allowed within the Aerojet Special Planning Area without prior consultation with USEPA and the Central Valley RWQCB, and issuance of associated written groundwater permits.

Sacramento County Code Chapter 6.28 – Wells and Pumps

Sacramento County Code Section 6.28.000(G) states that any application for a well permit within 2,000 feet of a known groundwater contaminant plume is subject to special review by appropriate regulatory agencies, including, but not limited to, the Sacramento County Environmental Management Department and the Central Valley RWQCB, to evaluate potential impacts to public health and groundwater quality.

Sacramento County Environmental Management Department

The Sacramento County Environmental Management Department serves as the local CUPA, and regulates hazardous waste, aboveground petroleum storage and risk management plans, hazardous materials business plans and chemical inventories, risk management plans, and underground storage tanks.

Sacramento Metropolitan Air Quality Management District

Construction Asbestos Abatement and Naturally Occurring Asbestos

The USEPA has delegated authority to SMAQMD to enforce the federal National Emission Standards for Hazardous Air Pollutants through local SMAQMD Rule 902, Asbestos. An asbestos survey must be conducted by a Certified Asbestos Consultant, and an Asbestos Renovation/Demolition Survey & Notification Form must be completed by the consultant and submitted to SMAQMD. An Asbestos Abatement Notification Form is required for projects involving removal of asbestos containing materials greater than 160 square feet, 260 linear feet, or 35 cubic feet. Asbestos containing materials must be removed and properly disposed of by a licensed asbestos abatement contractor.

SMAQMD also enforces CARB's ATCM Rule for projects within SMAQMD's jurisdiction. As noted previously, prior to construction in areas where NOA has been deemed likely to occur by CGS, property owners or operators must either "test out" of the ATCM requirements with a Geologic Evaluation demonstrating that NOA is not present or apply for an Asbestos Dust Mitigation Plan. Plans and requests for geologic evaluations must be submitted to SMAQMD for review and approval. SMAQMD also performs periodic site inspections during construction to ensure that approved Asbestos Dust Mitigation Plans are being implemented.

CURRENT BESS SAFETY STANDARDS

SENATE BILL 38: EMERGENCY RESPONSE AND EMERGENCY ACTION PLANS FOR BATTERY ENERGY STORAGE FACILITIES

SB 38 amended Section 761.3 of the California Public Utilities Code to add safety requirements for battery energy storage projects. BESSs are already highly regulated under Chapter 12 of the California Fire Code, which sets strict standards for installation and operation of such systems, including internal fire detection and suppression systems and require hazard assessments prior to commercial operation. SB 38 requires every BESS facility in California to have an emergency response and emergency action plan that cover the premises of the facility, consistent with Labor Code Sections 142.3 and 6401 and related regulations, including the regulatory requirements applicable to emergency action plans in Title 8 of the California Code of Regulations. Under SB 38, the owner or operator of the facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan and must submit the plan to the county and, if applicable, the city where the facility is located.

Specifically, the emergency response and action plan must:

- Establish response procedures for an equipment malfunction or failure;
- Include procedures, established in consultation with local emergency management agencies, that provide for the safety of surrounding residents, neighboring properties, emergency responders; and
- Establish notification and communication procedures between the battery storage facility and local emergency management agencies.

Additionally, the plan may consider responses to potential off-site impacts such as poor air quality, threats to municipal water supplies, water runoff, and threats to natural waterways. The plan also may include procedures for the local emergency response agency to establish shelter-in-place orders and road closure notifications when appropriate.

ADDITIONAL BESS-RELATED SAFETY STANDARDS AND REGULATIONS

Some of the recent advances in BESS-related safety standards and regulations that would be utilized for the project include:

- **Containerization and separation of units through National Fire Protection Agency (NFPA) 855 – Standard for the Installation of Stationary Energy Storage Systems**
    - BESS are no longer project-specific engineered building level systems. NFPA 855 and product designs move to enclosure level BESS units with established spacing criteria to prevent a sitewide event.
    - The standard offers comprehensive criteria for the fire protection of energy storage system installations based on the technology used, the setting

where the technology is being installed, the size and separation of energy storage system installations, and the fire suppression and control systems in place.

- **NFPA 68**
    - This standard controls any combustible gas generation through ventilation. It applies to the design, location, installation, maintenance, and use of devices and systems that vent the combustion gases within an enclosure so that structural and mechanical damage is minimized.
- **NFPA 69**
    - This standard protects first responders by controlling and directing any buildup of flammable gas, to release in a predictable design. It provides requirements for installing systems for the prevention and control of explosions in enclosures that contain flammable concentrations of flammable gases, vapors, mists, dusts, or hybrid mixtures. It is intended for use by design engineers, operating personnel, and Authorities Having Jurisdiction.
- **Underwriters Laboratory Solution (UL) 9540A**
    - UL 9540A was developed to address safety concerns identified by the building codes and the fire service in the United States. One of the primary concerns that NFPA 855 (and the fire codes) try to address is the potential fire and explosion hazards associated with a battery system, such as an uninterrupted power supply or BESS. To control this hazard, the codes specify very stringent limits for energy capacity and separation distances.
- **Technology advances**
    - Lithium Iron Phosphate chemistry takes significantly higher internal temperatures to reach a point of thermal runaway and burns at a lower temperature.
    - Liquid cooling designs provide more consistent battery health.
    - BMS automatic shutoff and isolations.
    - Quality control of repeatable productized units in a factory allow for consistent production and improved quality assurance and quality control.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to hazards and hazardous materials if it would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably

foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment;

- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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;
- 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;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Please see Chapter 15, "Wildfire," of this EIR for the analysis of impacts related to wildland fires.

Issues Not Discussed Further

Hazardous Materials Handling or Emissions within One-Quarter Mile of a School—There are no schools within 0.25 mile of the project site; thus, there would be **no impact**, and this topic is not discussed further in this EIR.

Impact HAZ-1: Routine Transport, Use, or Disposal of Hazardous Materials or Reasonably Foreseeable Upset and/or Accident Conditions Involving the Release of Hazardous Materials

Project-related construction and decommissioning activities would involve the use, temporary storage, and transport of small amounts of hazardous substances 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 as presented in detail in the "Regulatory Setting" section above, including the County's requirements for handling and transport of hazardous materials. Handlers of hazardous materials (including construction contractors) are required to follow the manufacturer's labelling instructions for use and disposal. None of the substances used at the project site would be acutely hazardous. 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 Stormwater Pollution Prevention Plan (SWPPP), which must contain provisions for notification and proper cleanup of spills if they do occur. Therefore, hazards from transport, use, or disposal of hazardous materials, and hazards from accidental spills, would be **less than significant**.

The results of the Phase I ESA performed for the project site (Dudek 2021) did not identify any Recognized Environmental Conditions other than the Aerojet contaminated groundwater plume and the White Rock Dump North, which are evaluated in Impact HAZ-2, below.

Operation of the proposed project would include 3.72 acres of BESS with capacity to store approximately 100 MW AC/400 megawatt hours of energy. As described above in the "Regulatory Setting" section, SB 38 amended Section 761.3 of the California Public Utilities Code to add safety requirements for battery energy storage projects. BESSs are regulated under Chapter 12 of the California Fire Code, which sets strict standards for installation and operation of such systems, including internal fire detection and suppression systems, and requires hazard assessments prior to commercial operation. As discussed above under "BESS-related Fire Hazards", there have been recent incidents of large fires that have occurred at BESSs in California and other states due to inadequate safety protocols. Therefore, SB 38 requires every BESS facility in California to have an emergency response and emergency action plan that covers the premises of the facility. Additionally, the project would incorporate additional safety standards and regulations as described above in the "Additional BESS-related Safety Standards" Section. Hazards from BESSs are considered a **potentially significant** impact.

Based on CGS Special Publication 192 and the SMAQMD's applicability map, portions of the project site likely contain NOA and have already been delineated by SMAQMD as parcels that are subject to CARB's ATCM for Construction, Grading, Quarrying and Surface Mining Operations (see Plate HAZ-4), unless it is demonstrated by a geotechnical report that NOA is not present. Other areas of the project site (shown in orange on Plate HAZ-4) may also contain NOA, and if so, would also be subject to the ATCM. Therefore, this impact is considered **potentially significant.**

Mitigation Measures

Implement Mitigation Measure AQ-3 (Site Investigation for Potential Naturally Occurring Asbestos).

HAZ-1: Prepare an Emergency Response and Emergency Action Plan.

> Prior to issuance of grading permits, the operator of the proposed facility shall coordinate with the appropriate local emergency management agencies, unified program agencies, and local first responders to develop an emergency response and emergency action plan. The plan must establish response procedures for an equipment malfunction or failure; include procedures that provide for the safety of surrounding residents, neighboring properties, emergency responders; and establish notification and communication procedures between the battery storage facility and local emergency management agencies. The plan shall be submitted to the County for review and approval.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure HAZ-1 would reduce the impact from potential hazards associated with the proposed battery storage system to a **less-than-significant** level by requiring preparation of an emergency response and emergency action plan that meets the requirements of SB 38, which would be submitted to the County for review and approval. Implementation of Mitigation Measure AQ-3 would reduce human health hazards associated with generation of fugitive dust that potentially contains NOA. If the site investigation determines that NOA is present on the project site, then implementation of a SMAQMD-approved dust mitigation plan would reduce the impact from human health hazards related to generation of airborne NOA during construction and decommissioning activities and as a result, the impact would be **less than significant with mitigation**.

IMPACT HAZ-2: HAZARDS FROM DEVELOPMENT ON A SITE LISTED IN CALIFORNIA GOVERNMENT CODE SECTION 65962.5 (CORTESE LIST)

The Aerojet contaminated groundwater plume is part of the Aerojet Superfund site and is also on the Cortese list. The northwestern portion of the project site would include installation of new facilities on land that overlies the plume. As described above, the approximate depth to groundwater in the north and northwestern portions of the project site, in the vicinity of the Aerojet contaminated groundwater plume where deeper excavations may be necessary for project-related electrical towers, was approximately 150 feet in the Spring of 2023 (DWR 2024). Groundwater encountered in the soil borings for the site-specific geotechnical report consisted of perched groundwater above an impermeable soil layer, and therefore was not indicative of the actual groundwater table at the project site (Terracon Consultants, Inc. 2021). The shallow perched groundwater is not contaminated. Therefore, construction-related excavation for the proposed project would not encounter contaminated groundwater.

Aerojet is conducting ongoing groundwater remediation activities in the project area via GET wells, and also operates groundwater monitoring wells, with oversight from the Central Valley RWQCB and USEPA. An existing GET well is situated in the immediate vicinity of the proposed access road from the proposed switchyard to the existing SVRA access road (which would also provide access to the project site; additional project-related improvements are proposed along the road, including installation of electrical towers). Additional GET wells and monitoring wells are situated in the vicinity of the proposed substation, BESS, and solar panels to the north. Another GET well and adjacent monitoring well are located adjacent to a small spring in the central portion of the project site. Furthermore, construction of the western end of the proposed access road at Grant Line Road would occur approximately 400 feet from a Cortese-listed site (the White Rock Dump North), which also includes a contaminated groundwater plume. Project-related facilities have the potential to interfere with remediation activities by damaging or destroying existing remediation and/or monitoring wells during the construction process, and during project operation if proposed facilities are not properly sited.

Potable water is needed to supply the proposed project during the construction, operation, and decommissioning phases. Based on the results of a *Groundwater Resource Impact*

Analysis (Groundwater Study) performed by Dudek (2024b), it is unlikely that the existing on-site groundwater wells have sufficient production capability for the 253 acre-feet of water needed over the projected 18 months for project construction and 12 months of decommissioning. The current on-site wells only supply the existing ranch house needs and have a history of going dry (Dudek 2021). The Groundwater Study also concluded that the potential for obtaining additional groundwater from new wells drilled in either the younger Cenozoic units or the older Mesozoic units to serve as the principal water source for project construction and decommissioning appears infeasible due to the measured potential well yields (Dudek 2024b). The Groundwater Study (Dudek 2024b) noted that additional aquifer testing would be required to evaluate the younger Cenozoic units on the project site, but stated that the current wells may be adequate for the project's estimated operational needs (i.e., 10.5 acre feet per year over a 35-year period).

Depending on the location of the project's groundwater well(s), groundwater withdrawal to supply the proposed project has the potential to cause migration of the Aerojet plume, which contains perchlorate, NDMA, PCE, and TCE and which occurs in some of the younger Cenozoic units on the project site (see Plate HAZ-3). The contact between the younger Cenozoic units on the west with the older bedrock units is approximately the same as the groundwater subbasin boundary line shown in Plate HAZ-3. The amount and extent of the Aerojet contamination plume is only generally defined, and therefore the Groundwater Resource Analysis stated that if groundwater pumping from outside the current areas of Aerojet remediation in the younger Cenozoic units is considered, the groundwater evaluation should include an analysis of the potential for groundwater migration from the adjacent Aerojet plume (Dudek 2024b). Therefore, this impact is considered **potentially significant**.

Mitigation Measures

HAZ-2a: Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone.

1. No new project-related groundwater wells shall be installed within the 2,000-foot Consultation Zone established by County Municipal Code 6.28.000(G) adjacent to the boundary of the Aerojet contaminated groundwater plume.

2. Existing groundwater wells within the project site that are within the 2,000-foot Consultation Zone shall not be used for project-related water supply.

HAZ-2b: Prepare and Implement a Health and Safety Plan.

To protect the health of construction workers and the environment, the project applicant or construction contractor(s) shall prepare and implement a Health and Safety Plan (HASP) as described below:

- The HASP shall be prepared in accordance with State and federal OSHA regulations (29 CFR 1910.120) and approved by a certified industrial hygienist. Copies of the HASP shall be made available to construction workers for review

during their orientation training and/or during regular health and safety meetings. The HASP shall identify potential hazards (including stained or odiferous soils at any location where earthmoving activities would occur), chemicals of concern (e.g., perchlorate, PCE, TCE, NDMA), personal protective equipment and devices, decontamination procedures, the need for personal or area monitoring, and emergency response procedures.

- The HASP shall also require notification of Aerojet, USEPA, and the Central Valley RWQCB if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater, or groundwater with a surface sheen) is encountered within the area underlain by the Aerojet groundwater plume or the vicinity of the White Rock Dump North. All excavation activities within 100 feet of encountering such soil or groundwater shall cease until consultation occurs with Aerojet and the appropriate regulatory agencies.

- The HASP shall state that if previously undiscovered underground storage tanks related to ranch activities, or stained or odiferous soil or groundwater are encountered outside the areas of the Aerojet groundwater plume or the White Rock Dump North during construction activities, Sacramento County EMD shall be notified and the situation shall be remediated in accordance with Sacramento County EMD requirements. If directed by Sacramento County EMD, the project applicant shall retain a licensed environmental professional to conduct a Phase II ESA that includes appropriate soil and/or groundwater analysis. Recommendations contained in the Phase II ESA to address any contamination that is found shall be implemented before reinitiating ground-disturbing activities in these areas.

HAZ-2c: Coordinate with Aerojet to Close, Relocate, or Avoid Monitoring Wells.

During the project's design phase, the project applicant and its engineer(s) shall consult with Aerojet with oversight by Sacramento County to ensure that project-related facilities are placed far enough away from existing remediation and monitoring wells to avoid damage or destruction and to ensure that Aerojet retains appropriate access to the wells. If construction activities would occur within 100 feet of any existing remediation or monitoring wells, exclusionary fencing shall be placed around the wells prior to the start of construction activities. If avoidance of remediation or monitoring wells is infeasible, the project applicant shall coordinate with Aerojet for the closure, relocation, or replacement of wells in a manner that complies with Aerojet remedial activities and monitoring plans. The locations of existing remediation and monitoring wells at the project site, and wells that are off-site but within 100 feet, shall be shown on the construction drawings and the construction contractor shall be informed of the locations of the wells with instructions to avoid them. If any remediation or monitoring wells are damaged during construction, the project applicant shall be responsible for paying for repairs, at the discretion of Aerojet.

Significance After Mitigation

Implementation of Mitigation Measure HAZ-2a would reduce the potentially significant impact from effects on the Aerojet contaminated groundwater plume by ensuring that no new groundwater wells or water from existing groundwater wells within 2,000 feet of the contaminated groundwater plume is used for project-related purposes. Implementation of Mitigation Measure HAZ-2b would reduce the potentially significant impact from encountering previously unknown soil or groundwater contamination at the project site by requiring preparation of a HASP, consultation with the appropriate regulatory agencies, performance of a Phase II ESA with soil or groundwater testing, and implementing remediation prior to resuming construction. Implementation of Mitigation Measure HAZ-2c would reduce the potentially significant impact from damage to or destruction of Aerojet remediation and monitoring wells by requiring that the project applicant coordinate with Aerojet during the project design phase to ensure that wells are properly avoided and appropriate access to Aerojet is provided, and to ensure that well locations are marked on construction drawings and in the field with installation of exclusionary fencing. Therefore, with implementation of Mitigation Measures HAZ-2a, HAZ-2b, andHAZ-2c, impacts from construction in a Cortese-listed site would be reduced to a **less than significant** level.

Impact HAZ-3: Airport Safety Hazards

Rancho Murieta Airport

The privately-owned Rancho Murieta Airport is approximately 4.5 miles south of the southern end of the project site. The tall facilities at the proposed on-site substation, gen-tie route, and switchyard would be approximately 7.5 miles north of the Rancho Murieta Airport. Airport safety zone contours for the Rancho Murieta Airport were created for the Ward Property Soil Borrow Site IS/MND (Sacramento County Department of Planning and Environmental Review 2014). The largest safety zone which extends furthest from the runways is Zone 6, the Traffic Pattern (Overflight) Zone. The dimensions of the Rancho Murieta Airport safety areas were determined by evaluating FAA safety zone dimensions, by analyzing historical aircraft accident data and by evaluating safety zone dimensions that encompass significant hazard areas. Rancho Murieta is a small airport without a control tower and does not accommodate commercial jet flights, and it has a small number of average daily flights (i.e., 22 flights per day in 2023) by small aircraft. In general, most aircraft accidents happen within one mile of the runways and therefore this 1-mile distance is of the greatest concern for land use planning (Sacramento ALUC 1992). Due to the distance of the project site from the Rancho Murieta Airport, and 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 would not represent an airport noise hazard or safety hazard for the Rancho Murieta Airport, and thus there would be **no impact**. (Please see Chapter 3, “Aesthetics,” for the analysis related to hazardous glare impacts.)

Sacramento Mather Airport

The runways at the publicly-owned Sacramento Mather Airport are approximately 6.3 miles southwest of the project's proposed switchyard and gen-tie route, and approximately 7.3 miles southwest of the proposed substation. The project site is within the Mather Airport Influence Area, Review Area 2, as delineated in the Mather Airport ALUCP (ESA 2022). Mather Airport includes a control tower with instrument approaches and accommodates hundreds of flights per day comprised primarily of commercial jets and military aircraft.

Because the project site is 6.3 miles from the nearest Mather Airport runways where loud aircraft would be operated, the proposed project would not represent a noise hazard with respect to Mather Airport.

The maximum height of the proposed BESS would be 25 feet; the BESS would be arranged in modular arrays similar to cargo containers. The project's proposed 230 kV gen-tie line would consist of one or two single-circuit structures, which could be constructed with up to 150-foot-tall wood, concrete, or steel poles. The gen-tie line would extend from the proposed substation to the proposed switchyard along the project's access road, which includes a portion of the existing Prairie City SVRA paved access road along the SVRA's southern boundary. The project's on-site substation would consist of components up to 150 feet tall, and feeders would be overhead lines constructed with 150-foot-tall and 100-foot-tall poles for single and double circuits, respectively. As shown in Plate HAZ-5, the proposed switchyard and gen-tie route would be immediately adjacent to, but outside of, the Mather Airport's 14 CFR Part 77 Airspace Protection Surfaces boundary. The proposed substation would be approximately 0.75 mile southeast of the Airspace Protection Surfaces boundary. Therefore, the proposed project components would not represent a violation of CFR Part 77 Subpart B imaginary airspace surfaces associated with Mather Airport.

An overflight notification document must be recorded for any local agency approval of residential land use development within the overflight notification area; however, the proposed project does not include residential development.

Therefore, implementation of the proposed project would not result in an aircraft safety hazard or a safety hazard for people residing or working in the project area as related to Mather Airport, and this impact would be **less than significant.**

Potential aircraft hazards associated with substantial new sources of glare from the PV panels are evaluated in Chapter 3, "Aesthetics."

Impact HAZ-4: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

All construction materials and equipment would be staged and stored on the project site. However, temporary lane closures could be necessary for a short period during

construction of the west end of the project's access road at the intersection of Grant Line and White Rock Roads, or during construction of project access roads from Scott Road.

The project applicant is required to obtain written authorization from the Sacramento County Department of Transportation for construction of roadway improvements where lane closures are required, including an encroachment permit. The Right of Way Management Section acts as the lead agency in the review process and is responsible for the coordination and management of the review process. Traffic Control Plans and/or Detour Plans are reviewed and managed by the Right of Way Management Section and are required for all construction work within the road right of way which modifies vehicular, bicycle, and/or pedestrian traffic patterns. Traffic Control Plans for project-related construction of the aforementioned access roads would be prepared and implemented by the applicant and reviewed and approved by the County required to ensure the safe and efficient movement of traffic and emergency vehicles through construction work zones.

Emergency access during project construction and operation would be provided from the new access road west of the proposed switchyard, and then along a portion of the existing Prairie City SVRA access road along the southern end of the SVRA, and from there into the project site. Emergency access would also be available from several new project access roads that would extend onto the site east and west from Scott Road.

The project site is not situated in an area of the County where flood hazard evacuation zones have been designated (Sacramento County 2024a). In the event of an evacuation from a wildland fire hazard, the project site is situated in Evacuation Zone 84: Slough House & Rancho Murietta. For this evacuation zone, Scott Road, Grant Line Road, White Rock Road, and Prairie City Road are all designated routes leading east–west and north onto U.S. Highway 50 (Sacramento County 2024b). Any necessary emergency evacuations in the vicinity of the project site would be coordinated by Sacramento County officials through the County OES. Sacramento County OES has prepared and maintains the *Sacramento County Evacuation Plan* (Sacramento County OES 2018). As discussed in the Evacuation Plan, the primary mode of transportation that would be used during an evacuation would be the evacuees' private transportation resources. Law enforcement would be the primary agency for managing the movement of people during an evacuation. Primary evacuation routes in Sacramento County consist of the major interstates, highways, and prime arterial roadways. Traffic conditions are monitored along evacuation routes, and operational adjustments would be made by County officials as necessary during an evacuation to maximize throughput. During an evacuation, County Department of Transportation traffic engineers, along with California Department of Transportation (Caltrans), would be able to quickly calculate traffic flow capacity and decide which of the available traffic routes should be used to move people in the correct directions and to adjust evacuation routes based on real-time conditions. Additionally, known traffic conditions may be communicated to Internet applications such as WAZE and Google Crisis Maps to better inform the public in real time regarding available traffic conditions. In the immediate project vicinity, any employees who may be present on the project site could use either the Prairie City SVRA access road, which connects with White Rock Road for east-west movement, or the project's western access road which connects with Grant Line Road (north-south) and White Rock Road. From White Rock Road a variety

of roadways provide access to U.S. 50 including Prairie City Road and East Bidwell Street.

Project operations would be monitored remotely through the control system, with only periodic inspections and maintenance activities that could require up to 10 employees during routine maintenance activities, grazing activities, and solar panel washing. Therefore, it is unlikely that workers would be on-site even if an evacuation were necessary, but in that event, either Scott Road or the project's new access road at the intersection of Grant Line and White Rock Roads would be used for evacuation from the site. These access roads would also provide emergency vehicle access to the site, as part of the project's emergency response and emergency action plan required by SB 38.

For the reasons stated above, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and therefore this impact would be **less than significant.**

10 HYDROLOGY AND WATER QUALITY

INTRODUCTION

This chapter describes the regulatory and environmental setting for hydrology, drainage, and water quality at the project site, and presents an analysis of 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

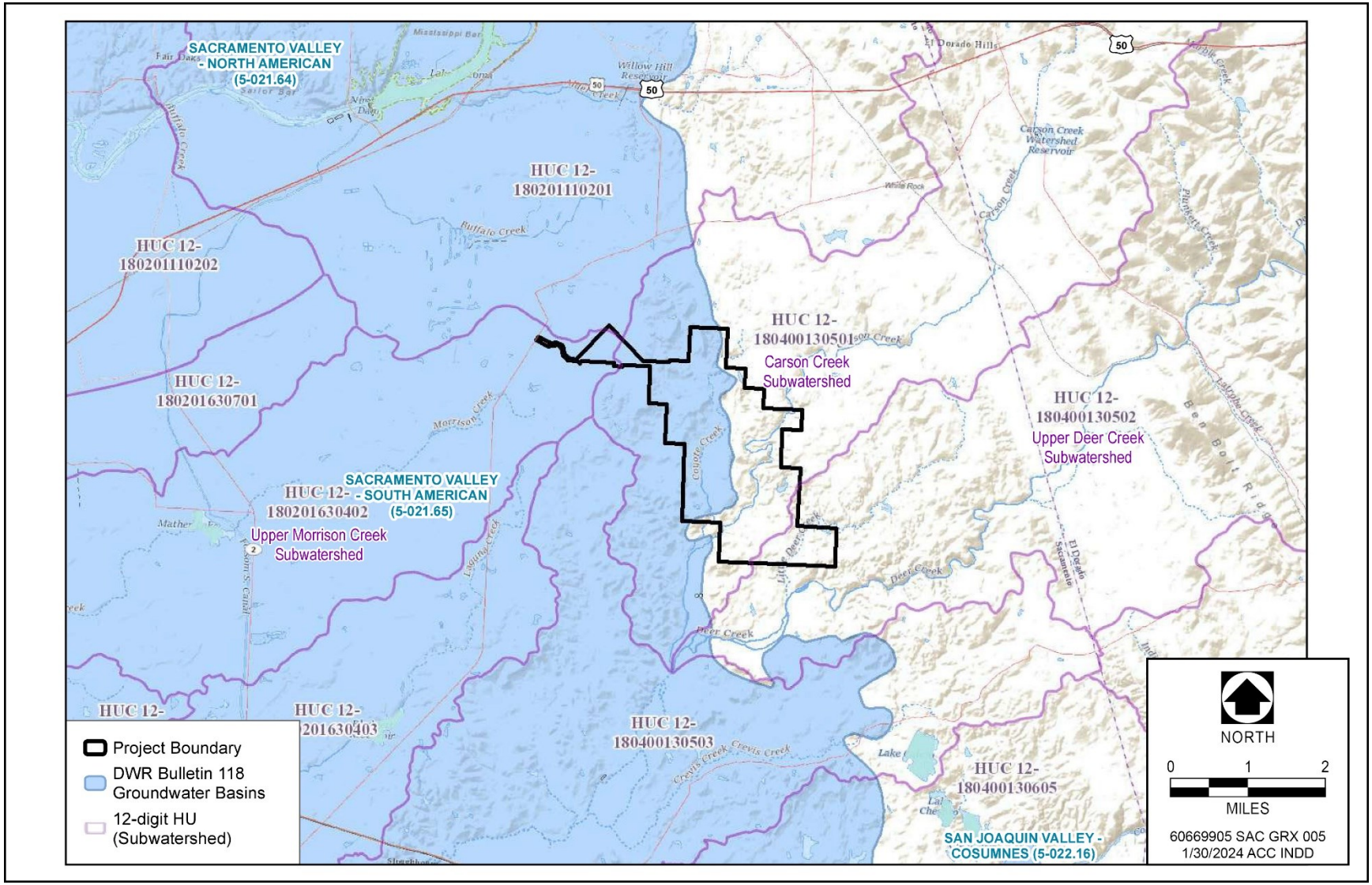
WATERSHEDS AND DRAINAGE

The project site is situated primarily within the gently rolling foothills at the western margin of the Sierra Nevada. The northwestern corner of the project site is situated at the eastern margin of the Sacramento Valley. The project site is covered with grassland and scattered oak trees. Elevations range from 170 to 275 feet above mean sea level. The climate in the project region is Mediterranean, characterized by hot, dry summers, and cool, moist winters. Most precipitation occurs from November through April.

The project site is within portions of three different surface water subwatersheds: Upper Morrison Creek (in the northwest corner), Carson Creek (most of the project site), and Upper Deer Creek (in the southeast corner) (see Plate HYD-1). Coyote Creek, Carson Creek, and Little Deer Creek, along with several tributaries thereto, all flow through the project site from north to south. Coyote Creek discharges into Carson Creek just southeast of the project site; Carson Creek and Little Deer Creek both discharge into Deer Creek at the same point approximately 1.5 miles south of the project site. Deer Creek continues to flow southwest generally parallel to and north of the Cosumnes River for several miles, eventually discharging into the Lower Cosumnes River just before the State Route 99 overcrossing.

Scott Road, which runs through the project site, has an existing bridge crossing over Carson Creek and a culvert crossing over Little Deer Creek. The bridge crossing consists of an approximately 18-inch deck with four, 15-inch piers. The culvert crossing consists of an approximately 50-foot-long, 60-inch-wide corrugated metal pipe. These are the only existing drainage facilities within the project site. Throughout the site, stormwater sheet flows via overland flow from areas that are topographically higher into the topographically lower creeks and tributaries, which flow south-southwest.

Plate HYD-1: Surface Watersheds and Groundwater Basins



Source: Dudek 2024b, adapted by AECOM in 2024

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 (e.g., drinking, recreation, aquatic habitat, and agricultural use) are impaired by pollutants. Beneficial uses for waters in the project region are contained in the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Basin Plan), updated and adopted by the Central Valley Regional Water Quality Control Board (RWQCB) in 2019.

As described previously, the creeks that flow through the project site discharge into the Lower Cosumnes River. The Basin Plan designates the following beneficial uses for the Cosumnes River: municipal and domestic supply, agricultural irrigation, stock watering, water contact and non-contact recreation, warm and cold freshwater habitat, warm and cold migration of aquatic organisms, warm and cold spawning habitat, and wildlife habitat (Central Valley RWQCB 2019). Applying the Central Valley RWQCB's "tributary rule," the beneficial uses of any specifically identified water body generally also apply to all its tributaries, including all of the waterbodies listed above.

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.

Table HYD-1 lists impaired water bodies in the project region included in the State Water Resources Control Board's (SWRCB) 303(d) list that could receive runoff from the proposed project, the pollutants of concern, and whether they have approved TMDLs. Even if a specific stream is not included in the SWRCB's 303(d) list, any upstream tributary to a 303(d)-listed stream could contribute pollutants to the listed segment (for example, Coyote Creek and Little Deer Creek).

Table HYD-1: Section 303(d) List of Impaired Water Bodies

Impaired Water Body	Pollutant	Pollutant Source	TMDL Status
Carson Creek (Serrano Parkway to Deer Creek)	Assessed, but not listed		
Deer Creek (El Dorado and Sacramento Counties)	Assessed, but not listed		
Cosumnes River, Lower (below Michigan Bar)	Indicator Bacteria	Unknown	Still in process (was expected in 2021)
Cosumnes River, Lower (below Michigan Bar)	Invasive Species	Unknown	Still in process (was expected in 2019)
Cosumnes River, Lower (below Michigan Bar)	Mercury	Unknown	Expected in 2033
Cosumnes River, Lower (below Michigan Bar)	Dissolved Oxygen	Unknown	Expected in 2035
Cosumnes River, Lower (below Michigan Bar)	Toxicity	Unknown	Expected in 2035

Source: SWRCB 2022

Notes: TMDL = total maximum daily load

Flooding

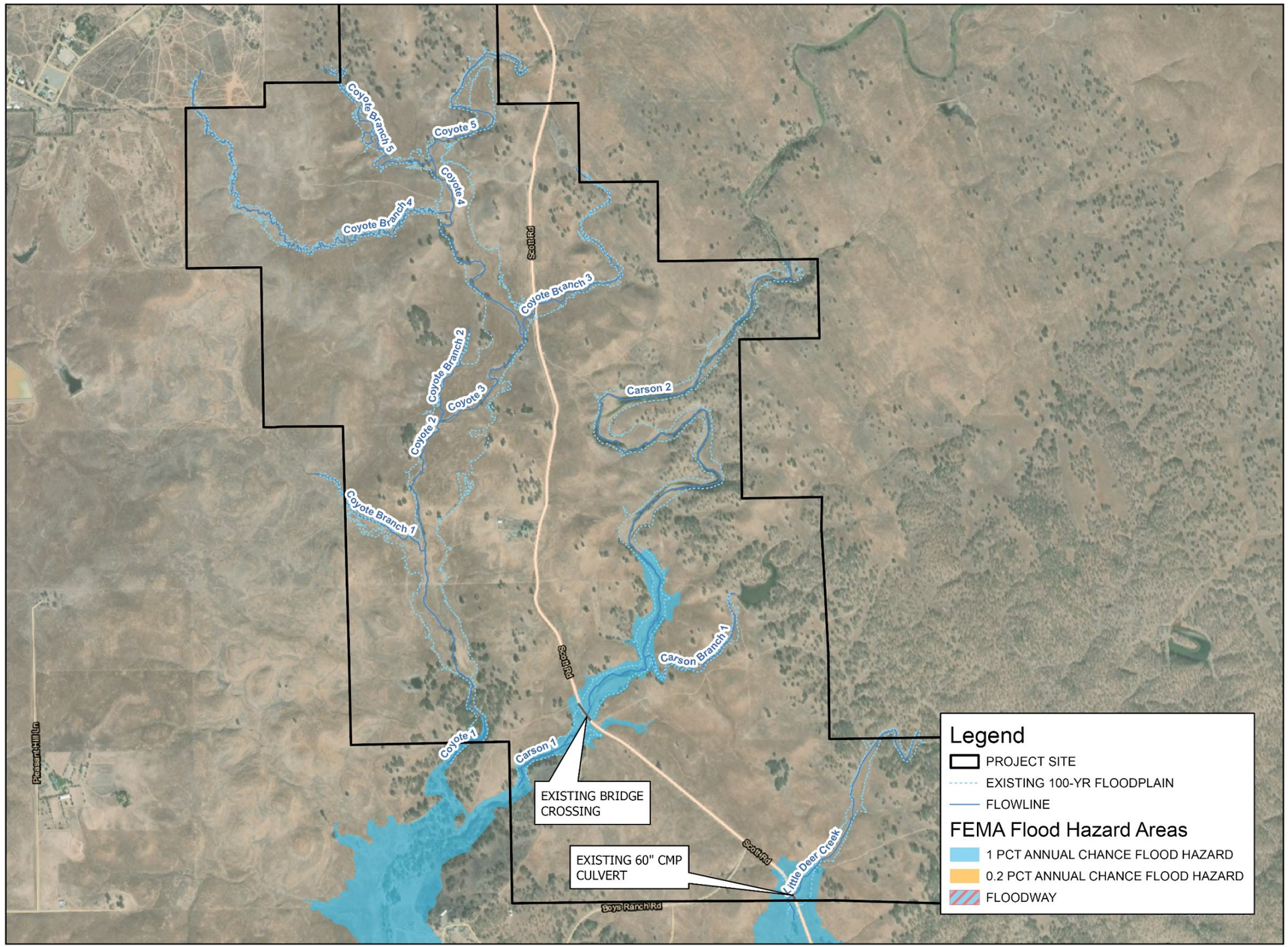
A review of Flood Insurance Rate Maps (FIRMs) created by the Federal Emergency Management Agency (FEMA) indicate that only two small areas of the project site have been mapped by FEMA: a portion of Carson Creek upstream and downstream from the Scott Road bridge overcrossing, and a portion of Little Deer Creek upstream and downstream from the Scott Road culvert crossing (FEMA 2012, 2018) (see Plate HYD-2). Because there are a variety of streams and tributaries that flow through the project site and because the project includes 28 proposed stream crossings for internal roadway access, hydraulic modeling was performed by Kimley Horn (2023a) to determine the existing 100-year flood potential for the reaches of Coyote Creek, Carson Creek, Little Deer Creek, and their tributaries that flow through the project site. The 100-year floodplains under existing conditions, based on the results of hydraulic modeling, are shown in Plate HYD-2.

The project site is not located within the 200-year floodplain and therefore is not subject the Urban Level of Flood Protection requirements contained in the Central Valley Flood Protection Plan (California Department of Water Resources [DWR] 2024).

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) soil data, all of the project site soils are classified as either hydrologic Group D or C, which consist of soils with a very high and high stormwater runoff potential, respectively (NRCS 2023, Kimley Horn 2023a).

Plate HYD-2: Existing Conditions 100-Year Floodplain



Source: Kimley Horn 2023a, adapted by AECOM in 2024

Groundwater Resources

The project site includes an existing, operational shallow groundwater well (with a depth of 35 feet) in the Coyote Creek floodplain that provides water for the on-site ranch house; this well has been known to go dry in the past during periods of drought. There are two other non-operational groundwater wells near the ranch house. There are additional exploratory boreholes located within the solar development area that were associated with past exploratory mine activities. These boreholes provide another potential source of on-site groundwater east of Scott Road in older Mesozoic Bedrock (Dudek 2024a). An additional (non-operational) groundwater well associated with a former homestead is present across Scott Road from the ranch house. Finally, the operational groundwater supply well for the Prairie City State Vehicular Recreation Area (SVRA) is immediately adjacent to and north of the solar development area, on the north side of the existing paved Prairie City SVRA access road. There are also numerous Aerojet groundwater extraction and treatment wells and groundwater monitoring wells within and near the project site (Dudek 2021).

As shown in Plate HYD-1, the project site is situated in two different groundwater resource areas. The eastern boundary of the South American Groundwater Subbasin shown on Plate HYD-1 was delineated based on the underlying geology; it represents the eastern edge of the aquifer within this portion of the Sacramento Valley. East of this boundary, the underlying geology transitions from primarily (younger) alluvial deposits in a sedimentary basin, too much older bedrock units within the western foothills of the Sierra Nevada. This boundary, or contact zone, runs through the project site from north to south. Therefore, groundwater on the project site occurs under two different hydrogeologic conditions: in younger Cenozoic units in the western and northern portions of the project site, and in older Mesozoic bedrock within fractures or poorly permeable units in the eastern and southern portions of the project site.

Groundwater in the younger Cenozoic units in the western and northern portions of the project site is held with deposits that comprise the Ione Formation, portions of the Mehrten Formation, and Quaternary undivided alluvial deposits (Dudek 2024b). Because these younger Cenozoic units are situated within the boundary of the Sacramento Valley Groundwater Basin, South American Subbasin as delineated by DWR (Basin ID 5-021.65), groundwater in this area is subject to the requirements of the Sustainable Groundwater Management Act (SGMA), and is therefore managed by several local Groundwater Sustainability Agencies under the adopted *South American Groundwater Subbasin Groundwater Sustainability Plan* (GSP) (Sacramento Central Groundwater Authority et al. 2022).

The DWR determined that the South American Subbasin is a high priority basin, but is not in a condition of critical overdraft (DWR 2019). On July 27, 2023, DWR approved the South American Subbasin GSP under the Sustainable Groundwater Management Act (DWR 2023). As described in the South American Subbasin GSP, groundwater management in the South American Subbasin has been occurring for decades. Stable groundwater conditions in terms of groundwater levels, storage volume, and interconnected surface waters have been achieved due to a variety of historically

implemented projects and management actions. The GSP determined, based on thorough analysis of the best available information, that the South American Subbasin will be sustainable over the next 20 years as long as planned recycled water, recharge, and other projects are implemented. These projects will raise groundwater levels above current levels, maintain storage volumes, and protect ecosystems, interconnected surface water, and shallow well users. The South American Subbasin GSP includes the following goals:

- Maintain the long-term average groundwater extraction rate at or below 273,000 acre-feet/year (equivalent to the sustainable yield set by the Water Forum Agreement);
- Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum Agreement;
- Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per 1 foot of drawdown in the groundwater basin; and
- Protect against any adverse impacts to surface water flows in the American, Cosumnes, and Sacramento rivers.

Groundwater Quality

As described in the South American Subbasin GSP, groundwater quality in the South American Subbasin is generally of good quality and meets local needs for municipal, domestic, and agricultural uses (Sacramento Central Groundwater Authority et al. 2022). Notable exceptions include the Aerojet contaminated groundwater plume, a portion of which underlies the northwestern portion of the project site. Another smaller contaminated groundwater plume associated with the former White Rock Dump is immediately adjacent to the northwest corner of the project site at Grant Line Road. Groundwater quality issues associated with these contaminant plumes are addressed in Chapter 9, “Hazards and Hazardous Materials,” of this EIR.

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.[1] Phase II of the NPDES stormwater permit regulations became effective in March 2003 and required NPDES permits be issued for construction

[1] 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.

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 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 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 life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

Sustainable Groundwater Management Act

In 2014, the California Legislature enacted a three-bill law (Assembly Bill [AB]1739, Senate Bill [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 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). 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. Agencies located within high- or medium-priority basins

were required to adopt GSPs by January 31, 2020, or January 31, 2022, respectively.[2] 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.

The South American Subbasin is a high-priority basin. A GSP for the South American Subbasin has been prepared (Sacramento Central Groundwater Authority et al. 2022), and has been approved by DWR.

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.

CONSERVATION ELEMENT

Policy 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.

Policy 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.

Policy CO-23: Development approval shall be subject to a finding regarding its impact on valuable water-supported ecosystems.

Policy CO-25: Support the preservation, restoration, and creation of riparian corridors, wetlands and buffer zones.

Policy CO-26: Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.

Policy 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.

[2] Unless the local agency has submitted an Alternative as defined in the SGMA which has been approved by DWR.

Policy CO-31: Require property owners to maintain all required stormwater measures to ensure proper performance for the life of the project.

Policy CO-33: Support an adequate and reliable Municipal and Industrial (M&I) water supply for development.

Policy 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.

Policy CO-53: Encourage BMPs and appropriate soil conservation practices regularly utilized by farmers and ranchers.

Policy 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.

Policy CO-93: Discourage fill in the 100-year floodplain.

Policy 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.

Policy CO-95: Development within the 100-year floodplain should occur in concert with the development of the Floodplain Protection Zone.

Policy CO-107: Maintain and protect natural function of channels in developed, newly developing, and rural areas.

Policy 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.

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

Policy 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.

Policy CO-118: Development adjacent to waterways should protect the water conveyance of the system, while preserving and enhancing the riparian habitat and its function.

Policy CO-123: The use of native plant species shall be encouraged on revegetation plans.

Policy CO-126: Prohibit obstruction or underground diversion of natural waterways.

SAFETY ELEMENT

Policy 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.

Policy 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.

Policy 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.

Policy 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.

Policy 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 (where applicable). 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, AI-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:

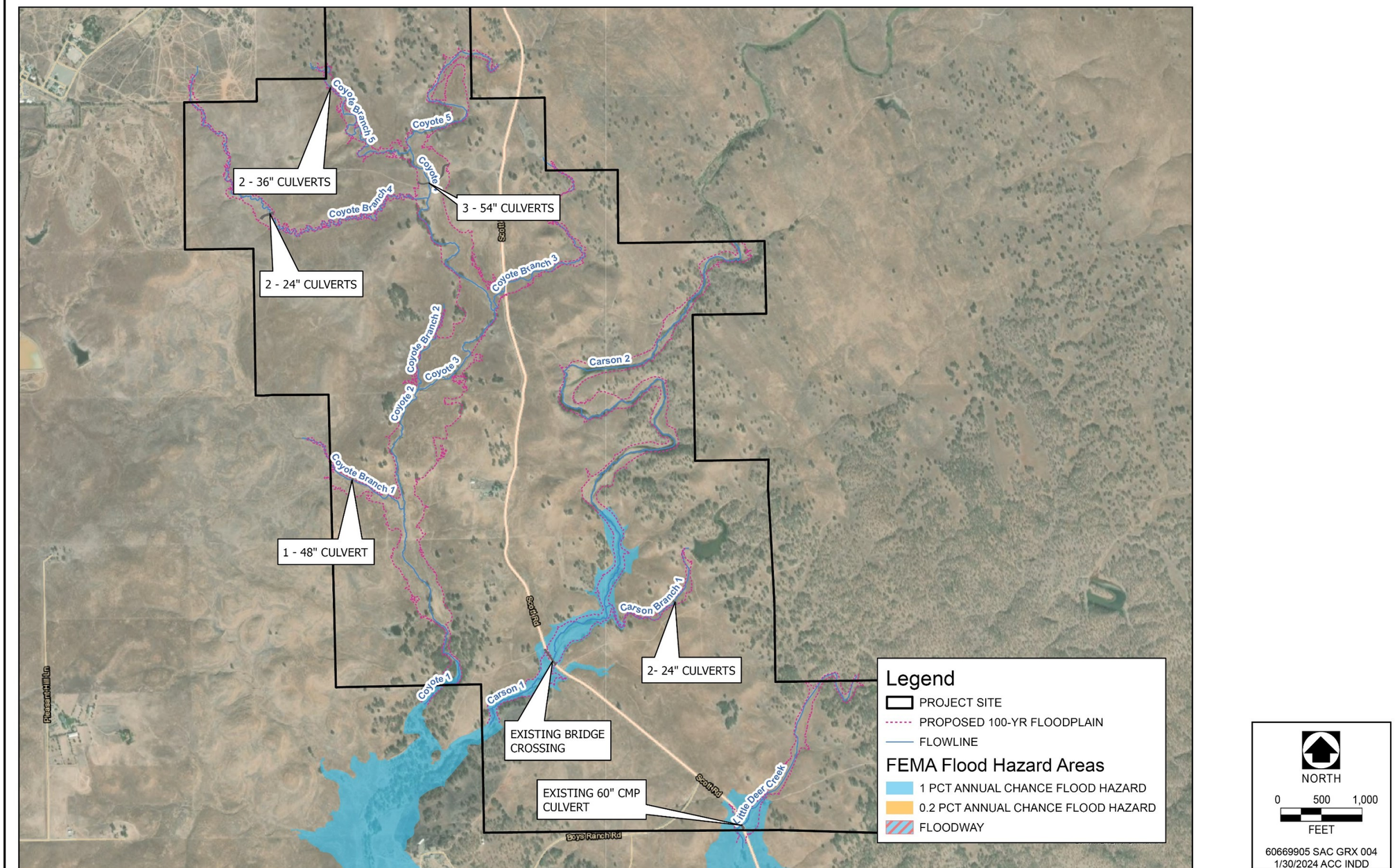
- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management 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 approximately 92 miles from the Pacific Ocean and therefore is not located in a tsunami hazard zone. There are no waterbodies near the project site large enough to represent a seismic seiche hazard.

The only FEMA 100-year floodplains are situated along the streambed of Carson Creek and Little Deer Creek (Plate HYD-2 and Plate HYD-3). Narrow, site-specific 100-year floodplains have also been found to be present along the smaller, upstream reaches of Carson Creek and Little Deer Creek, as well as Coyote Creek and its tributaries (Plate HYD-2 and Plate HYD-3). Temporary construction staging areas and construction trailers would be located outside of the FEMA and outside of the locally modeled 100-year floodplains.

Plate HYD-3: Proposed Conditions 100-Year Floodplain



Source: Kimley Horn 2023a, adapted by AECOM in 2024

During project operation, the proposed substation, switchyard, BESS, and maintenance yard, along with all of the solar panels (which would be mounted to poles anchored into the ground via steel piers), would be outside of the FEMA and locally modeled 100-year floodplains (Kimley Horn 2023c). Thus, there would be no buildings or other structures that would use or store chemicals or other pollutants within the FEMA or locally modeled 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 evaluated further in this EIR.

IMPACT HYD-1: VIOLATE WATER QUALITY STANDARDS OR SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY

The proposed project would add a solar power generating facility with a substation, switchyard, BESS and maintenance yard, pole-mounted solar panels, and internal native dirt or gravel roads to the current ranchland. As indicated in the project's Agricultural Management Plan (Appendix AG-1), grazing would occur under the solar panels in the spring. As shown in Plate HYD-2, stormwater runoff at the project site drains via overland flow into Coyote Creek, Carson Creek, and Little Deer Creek and their tributaries. Coyote Creek discharges into Carson Creek just southeast of the project site; Carson Creek and Little Deer Creek both discharge into Deer Creek at the same point approximately 1.5 miles south of the project site. Deer Creek continues to flow southwest generally parallel to and north of the Cosumnes River for several miles, eventually discharging into the Lower Cosumnes River just before the State Route 99 overcrossing. As discussed above in the Environmental Setting, the Lower Cosumnes River is included on the SWRCB's 303(d) list of impaired water bodies for indicator bacteria, invasive species, toxicity, mercury, and dissolved oxygen (SWRCB 2022).

Construction activities including excavating and grading 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. The proposed project would affect long-term water quality by adding minor new impervious surfaces and adding associated minor new additional urban stormwater runoff. New development has the potential to alter the types, quantities, and timing of contaminant discharges in stormwater runoff, which can adversely affect water quality.

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. A Preliminary Grading Plan has been prepared for the proposed project (Kimley Horn 2023b). 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 associated with foundations for the poles at the substation and switchyard, and foundations for the transmission line towers, could encounter groundwater. The project applicant is required by law to obtain 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 Low Impact Development (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 from project operation must be reduced using site design and source control measures to help keep pollutants out of stormwater as required by the SWRCB. In addition, the proposed project would 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.

At the completion of project construction, the land would be reseeded with native vegetation designed to support spring sheep grazing. The project site is currently zoned for agricultural use and has been used for cattle ranching for the last 100 years. The proposed sheep 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.

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 BMPs and pollutant source control measures, along with preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants. These project design features are requirements of regulatory permits and would also be made enforceable through County conditions of approval and would protect water quality as required by the Basin Plan. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and therefore this impact is considered **less than significant**.

IMPACT HYD-2: IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN BY SUBSTANTIALLY DECREASING GROUNDWATER SUPPLIES OR INTERFERING WITH GROUNDWATER RECHARGE

As described in detail in the Environmental Setting, the project site overlies two different groundwater resource areas. The northwestern half of the site is within the South American Groundwater Subbasin, where groundwater is held within confined aquifers. The southeastern half of the project site does not overlie a groundwater aquifer; instead, it overlies older bedrock deposits where groundwater is present within small rock pores and fractures, and the amount of water that can be obtained from any given location is highly variable.

There are four water supply wells on the project site that have been used in the past 50 years, all of which are in the vicinity of the existing on-site ranch house; three of the wells are non-operational. The non-operational well on the north side of Scott Road is 120 feet deep with a depth to groundwater of 43 feet; data for the other non-operational wells is not available. The one on-site operational well, which currently supplies water for the ranch house, is 35 feet deep with a depth to groundwater of 10 feet, and has been known to go dry during periods of drought. There are additional exploratory borings located within the solar development area that were associated with past exploratory mine activities. These boreholes provide another potential source of on-site groundwater east of Scott Road in older Mesozoic Bedrock (Dudek 2024a). In addition to the on-site wells, the operational groundwater supply well for the Prairie City SVRA is immediately adjacent to and north of the solar development area, on the northeast side of the existing paved Prairie City SVRA access road. The Prairie City SVRA well is situated in the South American Subbasin. The well is 285 feet deep and the most recent depth to groundwater (obtained in 2021) at this well was 194.6 feet (Dudek 2024b).

In support of the project's *Water Supply Assessment*, Dudek also prepared a *Groundwater Resource Impact Analysis* (Groundwater Study) for the project site which are both included as Appendix HYD-1 (Dudek 2024). The Groundwater Study evaluated the feasibility of using groundwater wells to satisfy the water demands of the proposed project, including potential well yields, subsidence, groundwater drawdown in neighboring wells, groundwater dependent ecosystems, and depletion of groundwater storage, which are discussed separately below.

Groundwater Demands and Potential Well Yields

Water demand for the construction phase of the project is estimated to be approximately 253 acre-feet (AF) during the 18-month construction period. Subsequent operation and maintenance of the project during its anticipated 35-year operational life would require approximately 10.5 acre-feet per year (AFY) of water for solar module washing, sheep grazing, landscape irrigation, and restroom use. Decommissioning water demand was conservatively estimated to be the same as that for project construction (i.e., 253 AF) (Dudek 2024b).

The boundary of the Aerojet contaminated groundwater plume in the project area (see Plate HAZ-2 in Chapter 9, "Hazards and Hazardous Materials") is essentially consistent with the boundary of the South American Subbasin shown in Plate HYD-1. The Groundwater Study recommended no project-related pumping from any existing groundwater wells and no project-related drilling of any new groundwater supply wells that are either inside of, or within 2,000 feet of, that portion of the project site which overlies the Aerojet contaminated groundwater plume in order to avoid potential plume migration and contamination of additional wells (Dudek 2024b). See Chapter 9, "Hazards and Hazardous Materials," for additional details and analysis related to the groundwater plume.

As summarized in the Groundwater Study, previous well yield studies included borehole testing in the older Mesozoic bedrocks units at the project site. The results indicated that although initial groundwater level depths were generally shallow (groundwater was obtained relatively near the surface), the drawdowns for the given pumping rates indicated relatively low specific capacities (meaning the well yields were low). The project's annual operational demand of 10.5 AFY equates to approximately 6.6 gallons per minute, and therefore the Groundwater Study concluded that one or more of the sample boreholes that were previously drilled on the project site in the Mesozoic bedrock units would be able to support the project's yearly operational demand, but would not support the project's construction and decommissioning demand (i.e., 253 AF each) (Dudek 2024).

Therefore, the Groundwater Study assumed that water to meet the project's demands for construction and decommissioning (253 AF each) would be from groundwater obtained from Sloughhouse Solar Project wells or the Sacramento County Water Agency (SCWA), or a combination of the two sources (Dudek 2024b, Dudek 2024c, and SWCA 2024). Due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater availability, water demands for construction and decommissioning (253 AF each) were not assumed to be provided by existing on-site groundwater wells. As explained in the Groundwater Study, additional data and analysis would be required to accurately assess the availability of on-site groundwater for construction and decommissioning (Dudek 2024b). Additionally, as discussed in Chapter 9, "Hazards and Hazardous Materials", and the Groundwater Study prepared for the proposed project, the proposed project would not source groundwater from any area subject to restrictions of the EPA and the SWRCB on groundwater applicable to the Aerojet Superfund remediation site and operable units, including groundwater extraction with the 2,000-foot consultation zone (Dudek 2024a).

Subsidence

As noted in the Groundwater Study, the Cenozoic sedimentary deposits within the South American Subbasin are currently producing some groundwater through the Aerojet Remediation Project, but these production rates are not available. The Groundwater Study also noted that land subsidence was not identified as an undesirable result in the South American Subbasin GSP. The Groundwater Study concluded that any adverse effects to infrastructure, or to beneficial uses, from subsidence due to project-related groundwater withdrawal would be unlikely due to the low historical total vertical displacement in the South American Subbasin (i.e., less than 0.05 feet over 4 years). The remainder of the project site consists of Mesozoic bedrock units that are not susceptible to land subsidence (Dudek 2024b).

Groundwater Drawdown in Nearby Wells

As discussed in the Groundwater Study, it is likely that on-site groundwater from the older Mesozoic bedrock units is not a feasible source for construction and decommissioning water requirements (253 AF over 18 months). In addition, alluvial aquifers appear to be limited within the project boundaries and an insufficient supply for the construction and decommissioning phases of the project. Due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater availability, water demands for construction and decommissioning (253 AF each) were not assumed to be provided by existing on-site groundwater wells. If on-site groundwater well(s) would be drilled to supply the 18-month 253 AF of groundwater estimated for project construction and 12-month 253 AF for decommissioning, the project could have an adverse effect by causing a drawdown of the groundwater levels in nearby wells. The Groundwater Study indicated that the temporary lowering of groundwater levels due to project well production for construction and decommissioning would likely only be a local effect, but additional studies would be required to evaluate potential interference to nearby wells if on-site groundwater were to be used to supply water for construction and/or decommissioning of the project (Dudek 2024b). The Prairie City SVRA groundwater supply well and various Aerojet groundwater extraction and treatment wells and groundwater monitoring wells are local to the project site and therefore could be affected. The potential well interference effect would need to be evaluated in the future based on well locations, aquifer properties, and proposed pumping rates.

Groundwater Dependent Ecosystems

In addition to the South American Subbasin GSP, the Groundwater Study also reviewed DWR's Natural Communities Commonly Associated with Groundwater dataset to determine potential wetland features and vegetation that may be groundwater dependent in the vicinity of the project site.

The Groundwater Study found that there are no groundwater dependent ecosystems or potential groundwater dependent ecosystems mapped in the vicinity of the project site. However, creeks from the project site discharge to Deer Creek approximately 1.5 miles to the southwest and may potentially support groundwater depending ecosystems on the lower end of the Cosumnes River. The South American Subbasin GSP (Sacramento Central Groundwater Authority et al. 2021) found that the reach of the Cosumnes River

that flows approximately between Deer Creek and Twin Cities Road is disconnected on a seasonal basis, but that some evidence of sub-seasonal connection does exist, and that additional research is needed to understand the stream/aquifer interaction. However, the SGMA only addresses the impacts on groundwater dependent ecosystems from groundwater pumping not from surface water diversions. Surface water rights currently allow for up to 61.5 AFY to be diverted from three points of diversion at the project site for stock watering; these water rights are currently not being used to their fully authorized amounts. The Groundwater Study considered that those water rights could potentially be used for project construction purposes, but the project does not propose to obtain water from surface water sources (Dudek 2024a).

Depletion of Groundwater Storage/Sustainable Yield

The South American Subbasin GSP estimated the amount of annual groundwater recharge at 298,900 AFY under future climate conditions. The extraction of 253 AF of groundwater during each of the project's construction and decommissioning phases would equate to 0.08 percent of the total average annual recharge in the South American Subbasin. The GSP estimates that the amount of groundwater withdrawal from pumping in the South American Subbasin under future climate conditions would be 305,100 AFY; therefore, the amount of groundwater withdrawal from project-related pumping would increase pumping in the Subbasin by 0.08 percent for the 18-month construction period and the 12-month decommissioning period.

The amount of project-related groundwater pumping for yearly operation is estimated to be approximately 10.5 AFY, and therefore a substantial depletion of groundwater storage would not result from the project's 35-year operational period pumping. Furthermore, the sustainable per-acre groundwater use within the South American Subbasin is estimated to be approximately 1.21 AFY per acre. The amortized per-acre groundwater use for the proposed project would be approximately 0.01 AFY per acre[3], which is well below the South American Subbasin's per-acre sustainable use (Dudek 2024b).

Conclusion

On-site groundwater in older Mesozoic bedrock that could be used to supply the project's 10.5 AFY operational water demand would not result in land subsidence, would not result in adverse effects on groundwater dependent ecosystems, and would not result in substantial depletion of groundwater storage or groundwater level drawdown at nearby wells. Therefore, the project's operational groundwater needs (10.5 AFY over a 35-year period) can be met by on-site groundwater without adverse effects to the sustainable yield of the South American Subbasin or neighboring wells in the Mesozoic bedrock units. Therefore, the project's impact from yearly operational groundwater demand is considered **less than significant**.

[3] The proposed project would use 253 AF for construction and 253 AF for decommissioning, plus 10.5 AFY each year for 35 years (project life 35-year amortization would be 26.5 AFY), divided by a project area of 2,555 acres.

Off-site sources of groundwater to meet the project's construction and decommissioning water demands (253 AFY for both construction [18-month period] and decommissioning [12-month period]) have been identified as using imported water via water trucks from the SCWA or Sloughhouse Solar Project wells (Dudek 2024b, Dudek 2024c, SWCA 2024). As indicated in personal communication between Sacramento County and SCWA, SCWA provides water to local contractors for construction needs through fill stations where the contractor pays for the water. These fill stations are included in SCWA's water supply master plan and supporting groundwater sustainability plan for the groundwater basin and SCWA could provide 253 AFY for both construction and decommissioning for the proposed project (personal communication, SCWA 2024). Additionally, in a memorandum prepared for the proposed project regarding the use of groundwater from the Sloughhouse Solar Project wells, it was concluded that the Sloughhouse Solar Project wells would have adequate yield to supply the required 253 AFY of water for construction and decommissioning activities for the proposed project. As indicated in that memorandum, the per-acre groundwater use is 0.65 AFY per acre within the Cosumnes Subbasin. Under sustainable conditions, assuming the estimated overdraft of 10,000 AFY, the sustainable per-acre groundwater use within the Cosumnes Subbasin would be approximately 0.60 AFY per acre. The 253 AF, one-year extraction is approximately 0.31 AF per acre, about half of the Cosumnes Subbasin per-acre sustainable use (Dudek 2024c).

As discussed in the Groundwater Study prepared for this project, due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater availability, water demands for construction and decommissioning (253 AF each) are assumed to be derived from the Sloughhouse Solar Project in the San Joaquin Groundwater Basin or the SCWA and would not be derived from on-site groundwater wells. Additional data and analysis are required to accurately assess the availability of on-site groundwater for construction and decommissioning. The Groundwater Study indicated that if on-site groundwater wells were used for construction and decommissioning water needs, the temporary lowering of groundwater levels due to project well production for construction and decommissioning would likely only be a local effect, but additional studies would be required to evaluate potential interference to nearby wells (Dudek 2024b). Should on-site groundwater be used for construction and decommissioning, additional studies would need to be completed, and this impact is considered **potentially significant**.

Mitigation Measures

Implement Mitigation Measure HAZ-1a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone).

HYD-2: Perform a Groundwater Hydrologic Study If On-site Groundwater Wells are Utilized for Project Construction and Decommissioning Activities.

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

- Retain the services of an independent consultant specializing in groundwater hydrology to perform a groundwater hydrologic study. The groundwater study

shall utilize hydrologic modeling to investigate whether the potential location of the proposed or existing groundwater well(s) and the amount of groundwater withdrawal that would be necessary to serve the proposed project would cause significant drawdown of the existing groundwater table such that existing groundwater wells would be adversely affected. The completed groundwater hydrologic study shall be submitted to the Sacramento County Department of Water Resources for review.

- Demonstrate that appropriate permits have been obtained for a permanent source of on-site or off-site water supply that would not result in a localized drawdown of the groundwater table such that other existing nearby wells would be affected (including the potable water supply well at the Prairie City SVRA). If modeling determines that significant drawdown would occur for other water wells would be adversely affected, the project applicant shall not be permitted to install a groundwater well.

Significance After Mitigation

Implementation of Mitigation Measures HAZ-1a and HYD-2 would reduce the impact from groundwater drawdown on neighboring wells by requiring that hydrologic modeling be performed to demonstrate that such drawdown would not occur before issuance of project permits. Therefore, with implementation of Mitigation Measures HAZ-1a and HYD-2, the project's impacts from construction and decommissioning water demands related to potential interference with sustainable groundwater management would be reduced. As a result, with implementation of these recommended mitigation measures, this impact would be **less than significant with mitigation**.

Impact HYD-3: Substantially Alter Drainage Patterns or Add Impervious Surfaces That Would Result in Increased Erosion, Exceed Storm Drainage Systems, Substantially Degrade Water Quality, Result in Increased Flooding, or Impede or Redirect Flood Flows

There is no existing stormwater drainage system at the project site. Stormwater runoff currently drains overland into tributaries of Coyote Creek, Carson Creek, and Little Deer Creek as shown in Plate HYD-2 and Plate HYD-3. Coyote Creek discharges into Carson Creek just southeast of the project site; Carson Creek and Little Deer Creek both discharge into Deer Creek at the same point approximately 1.5 miles south of the project site. Deer Creek continues to flow southwest generally parallel to and north of the Cosumnes River for several miles, eventually discharging into the Cosumnes River just before the State Route 99 overcrossing.

A project-specific *Level 3 Drainage Study* (Drainage Study) was performed by Kimley Horn in 2023, using Sacramento County drainage standards per the *Sacramento County Drainage Manual* (Sacramento County Department of Water Resources 1996). However, the switchyard was not included in the Level 3 Drainage Study.

Since the solar panels would be pole mounted and the ground would be re-seeded with vegetation after construction, the Drainage Study assumed 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. Installation of the pole-mounted solar panels would not require substantial grading; instead, the panels would be installed following the existing land contours (Kimley Horn 2023a, 2023b). As described in detail in Impact HYD-1, the applicant is required by the SWRCB's Construction General Permit to prepare and implement a SWPPP with associates BMPs that are designed to control erosion during the construction process.

The results of hydrologic modeling performed for the Drainage Study confirmed that construction of the proposed solar field with proposed native surface/gravel roads and creek crossings, and the proposed substation, BESS, and maintenance yard, would not alter the existing drainage patterns. Stormwater runoff for the 100-year design storm within each subshed at the project site would be substantially the same as existing conditions; either no increase in flow rates at all, or minor increases of 1 to 4 cubic feet per second (Kimley Horn 2023a).

The proposed switchyard in the northwestern corner of the project site would create approximately 8.25 acres of new impervious surfaces (600 feet x 600 feet). A detention basin (approximately 300 feet by 100 feet) would be constructed on the southwest side of the switchyard to control the associated stormwater flows (Kimley Horn 2023c).

The Drainage Study also included hydraulic modeling as required by Sacramento County for the areas where solar panels and the associated access roads would be installed. The project includes 28 proposed roadway crossings over existing creeks. However, only five of the proposed crossings were considered substantial enough to model in the Drainage Study (shown on Plate HYD-3). Four of these crossings are within the Coyote Creek subwatershed and one is within the Carson Creek subwatershed. The remaining proposed 23 crossings all drain less than 30 acres of land. Hydraulic modeling was performed for the 2-, 10-, and 100-year design storm events for each of the five crossings. The proposed on-site roads would all be 20 feet wide and would include culvert crossings underneath, which would allow for proposed drainage patterns to be consistent with existing conditions (Kimley Horn 2023a, 2023b, 2023c).

As discussed in the Environmental Setting, the only FEMA 100-year floodplains are situated along the streambed of Carson Creek and Little Deer Creek (Plate HYD-2). The results of site-specific hydraulic modeling determined that narrow, site-specific 100-year floodplains are present along the smaller, upstream reaches of Carson Creek and Little Deer Creek, as well as Coyote Creek and its tributaries (Plate HYD-2). The results of the hydraulic modeling demonstrated that the proposed development would not encroach on the existing 100-year floodplains along the creeks or on the effective FEMA floodplain (Plate HYD-3); therefore, CLOMR or LOMR submittals to FEMA would not be required and there would be no increase in upstream or downstream water surface elevations (Kimley Horn 2023a).

All of the proposed internal access roads and culverts have been sized to convey the 2-year peak flow without overtopping. Hydraulic model results indicated that internal project site road flooding could occur (in the areas where the solar panels are proposed) during 10- and 100-year storm events. However, the proposed on-site access roads where flooding could occur would only provide access to the proposed solar panels, and access is only required for periodic maintenance. Furthermore, these internal access roads would be privately owned and maintained and therefore the applicant is not required to implement County standards that would otherwise require all of the access roads to be above the modeled base flood elevation for the 10- and 100-year storm events (Kimley Horn 2023a).

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.

In conclusion, a preliminary drainage study related to construction and operational stormwater drainage effects on hydrology and hydraulics (flooding) as required by the County has been performed. Furthermore, per Sacramento County requirements, a detailed Level 4 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. This Level 4 Drainage Study would be required incorporate all project components, including the switchyard. Impacts related to alteration of drainage patterns or the addition of impervious surfaces that would result in increased erosion, exceed storm drainage systems, substantially degrade water quality, result in increased flooding, or impede or redirect flood flows for all project components need to be included in the drainage study to determine impacts. Therefore, this impact would be **potentially significant.**

Mitigation Measures

HYD-3. Prepare a Project-specific Level 4 Drainage Study.

Prior to obtaining a construction permit, the applicant shall prepare and submit a project-specific Level 4 Drainage Study to Sacramento County Department of Water Resources for approval. This study shall include all project components, including the switchyard components. Once approved, the applicant shall ensure that all measures are incorporated into project design and construction plans, as required by the Sacramento County Department of Water Resources.

Significance After Mitigation

Mitigation Measure HYD-3 would require the applicant to prepare a project-specific Level 4 Drainage Study to be approved by the Sacramento County Department of Water Resources. Theis Level 4 Drainage Study would be required incorporate all project

components, including the switchyard. Implementation of this mitigation measure would ensure that impacts related to alteration of drainage patterns or the addition of impervious surfaces that would result in increased erosion, exceed storm drainage systems, substantially degrade water quality, result in increased flooding, or impede or redirect flood flows for all project components would be included in the drainage study to determine impacts and appropriate measures would be incorporated into design or construction plans to reduce impacts. Therefore, this impact would be **less than significant with mitigation.**

IMPACT HYD-4: CONFLICT WITH A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLAN

Impact HYD-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 project site through preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants; and implementation of BMPs and pollutant source control measures to control operational erosion and pollutants. These measures would protect water quality as required by the Basin Plan (Central Valley RWQCB 2019). Therefore, development of the proposed project would not conflict with a water quality control plan, and this impact would be **less than significant**.

As described in Impact HYD-2, above, the project's limited yearly operational groundwater demands and the small amount of new impervious surfaces added as a part of the proposed project would not conflict with sustainable groundwater management as set forth in the *South American Groundwater Subbasin Groundwater Sustainability Plan* (Sacramento Central Groundwater Authority et al. 2022). As further described in detail in Impact HYD-2 above, the project's **potentially significant** impacts from construction and decommissioning water demands would be reduced through implementation of mitigation measures.

MITIGATION MEASURES

Implement Mitigation Measure HAZ-1a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone).

Implement Mitigation Measure HYD-2 (Perform a Groundwater Hydrologic Study If On-site Groundwater Wells are Utilized for Project Construction and Decommissioning Activities).

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures HAZ-1a and HYD-2 would reduce the potentially significant impact from groundwater contamination by limiting the area where groundwater wells can be drilled and used, and would reduce the impact from off-site groundwater drawdown on neighboring wells by requiring that hydrologic modeling be performed to demonstrate that such drawdown would not occur before issuance of project permits. Therefore, with implementation of Mitigation Measures HAZ-1a and HYD-2, the

project's impacts from construction and decommissioning water demands would not conflict with sustainable groundwater management as set forth in the *South American Groundwater Subbasin Groundwater Sustainability Plan* (Sacramento Central Groundwater Authority et al. 2022) and therefore this impact would be l**ess than significant with mitigation**.

11 LAND USE AND PLANNING

INTRODUCTION

This chapter describes the existing land use and setting of the proposed project area. It 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 whether the proposed project would result in a physical division of an established community.

ENVIRONMENTAL SETTING

EXISTING LAND USES

The project site consists of approximately 2,704 acres total, of which 1,412 acres are within the proposed solar development area. The site is east of Grant Line Road, south of White Rock Road, and includes land on both the east and west sides of Scott Road. Most of the project site consists of rolling hills covered with grassland and oak trees, which has historically been used as grazing land for over 80 years associated with the Barton Ranch. The Barton Ranch Headquarters, which consists of 16 buildings and structures including the ranch house along with various barns, sheds, a tankhouse, and other outbuildings, are present on the southern portion of the project site on the west side of Scott Road.

SURROUNDING LAND USES

The northern portion of the project site is adjacent to, and partially within, an easement over the southern end of the Prairie City State Vehicular Recreation Area (SVRA), which is owned and operated by California State Parks (State Parks) Off-Highway Motor Vehicle Division. The Prairie City SVRA encompasses approximately 1,115 acres and accommodates a variety of off-highway vehicle (OHV) activities including trail riding on a range of terrain types; and tracks for motorcycles, all-terrain vehicles, 4x4 vehicles, recreational OHVs, karts, and quarter midgets. The Prairie City SVRA also offers several day-use picnic areas, and overnight camping is planned in the future.

Land east of the project site consists of undeveloped rolling grazing land. The southwest corner of the project site is approximately 1,000 feet from the former Sacramento Boys Ranch, which closed in 2010. The former Boys Ranch property is owned by Sacramento County and is currently not in use for any purpose. The Deer Creek Hills Nature Preserve is a 4,500-acre working cattle ranch southeast of the project site.

There is a large-lot rural residence with an associated horse barn and training facilities on an elevated knoll on Pleasant Hill Lane, approximately 0.75 mile west of the southwestern corner of the project site. Pleasant Hill Lane is accessed via Glory Lane, from Grant Line Road. Glory Lane and Pleasant Hill Lane are private roadways.

A Teichert aggregate plant is located approximately 0.75 miles southwest of the proposed switchyard and the northwestern end of the project site. The Teichert Quarry and the Stoneridge Quarry are located adjacent to the northeastern corner of the project site.

Mather Airport is approximately 6.3 miles southwest of the project site. There is also one smaller local airport in the project vicinity, Rancho Murieta Airport, located approximately 4.5 miles to the south. See Chapter 9, "Hazards and Hazardous Materials," for a description of existing operations at the Mather Airport and Rancho Murieta Airport.

REGULATORY SETTING

FEDERAL

There are no federal plans, policies, regulations, or laws related to land use and planning that apply to the proposed project.

STATE

The California Planning and Zoning Law (Public Resources Code 65300 et. Seq) establishes standards and procedures governing the adoption and implementation of the County of Sacramento General Plan and zoning ordinances applicable to the proposed project.

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.

The General Plan has policies related to the location and design of renewable energy facilities.

Policy EN-19. Support the development and use of renewable sources of energy, including but not limited to biomass, solar, wind, and geothermal.

Policy PF-66. The Board of Supervisors and the County Planning Commission may approve, or recommend approval wherein the county has jurisdiction, of development projects for energy facilities that are contrary to any of the policies in this section only when justification is provided through findings.

Policy PF-67. Cooperate with the serving utility in the location and design of production and distribution facilities to minimize visual intrusion problems in urban areas and areas of scenic and/or cultural value including the following:

- Recreation and historic areas.
- Scenic highways.
- Landscape corridors.
- State or federal designated wild and scenic rivers.
- Visually prominent locations such as ridges, designated scenic corridors, and open viewsheds.
- Native American sacred sites.

Policy PF-68. Cooperate with the serving utility in the location and design of energy production and distribution facilities in a manner that is compatible with surrounding land uses by employing the following methods when appropriate to the site:

- Visually screen facilities with topography and existing vegetation and install site-appropriate landscaping consistent with surrounding land use zone development standards where appropriate, except where it would adversely affect access to utility facilities, photovoltaic performance or interfere with power generating capability.
- Provide site-compatible landscaping.
- Minimize glare through siting, facility design, nonreflective coatings, etc. except for the use of overhead conductors.
- Site facilities in a manner to equitably distribute their visual impacts in the immediate vicinity.

Policy PF-69. Cooperate with the serving utility to minimize the potential adverse impacts of energy production and distribution facilities to environmentally sensitive areas by, when possible, avoiding siting in the following areas:

- Wetlands.
- Permanent marshes.
- Riparian habitat.
- Vernal pools.
- Oak woodlands.
- Historic and/or archeological sites and/or districts.

Policy PF.70. Cooperate with the serving utility so that energy production and distribution facilities shall be designed and sited in a manner so as to protect the residents of Sacramento County from the effects of a hazardous materials incident.

Policy PF-76. The County supports the generation and use of energy produced from renewable resources.

Policy PF-77. The County supports a variety of solar and other renewable energy sources, including:

- A dispersed system that feeds into the electric delivery system,
- On-site facilities that primarily supply energy for on-site uses, and
- Properly sited large, centralized facilities consistent with Policy PF-78.

Policy 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.

Policy 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.

Policy 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.

Policy PF-92. Transmission lines should avoid to the greatest extent possible, cultural resources and biological resources such as wetlands, permanent marshes, riparian habitats, vernal pools, and oak woodlands. When routed through such areas, transmission lines should have maximum line spans and cross at the narrowest points which involve minimal cutting and cropping of vegetation, maintaining the drainage regime of wetland basins. Additionally, when feasible, such routes should be maintained to serve as biological dispersion corridors between areas of high biodiversity.

Policy PF-93. Protect native and non-native bird populations by incorporating electrocution prevention measures into the design of transmission towers.

Policy PF-95. Transmission lines should avoid paralleling recreation areas, historic areas, rural scenic highways, landscaped corridors, drainage basins, wetland mitigation, tree planting, and designated federal or state wild and scenic river systems, although these areas may be considered as options if facilities already exist there.

Policy PF-96. Locate transmission facilities in a manner that maximizes the screening potential of topography and vegetation.

Policy PF-97. Utilize monopole construction, where practicable, to reduce the visual impact on a corridor's middle and distant views.

URBAN SERVICES BOUNDARY AND URBAN POLICY AREA

The project site is located outside of the County's current Urban Services Boundary (USB) and Urban Policy Area (UPA).[1] The USB and the UPA 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 dryland 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. The GA-80 designation allows single-family dwelling units at a density no greater than 80 acres per unit (Sacramento County 2020).

Page 3 of the Agricultural Element of the Sacramento County General Plan (Sacramento County 2020) allows solar facilities on agricultural land with appropriate measures to minimize impacts:

> "Agriculture lands are likely to be impacted by the expansion of renewable energy sources because of the economic incentive programs and the need to provide cleaner energy. Much of rural Sacramento County is ideal for solar farms and other renewable facilities, however those facilities must be sited and designed to minimize impacts."

Other uses, such as the proposed project, are permitted with approval of a Use Permit, as described below.

[1] 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.

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.

As described above under "Land Use Designations," the project site is currently zoned as AG-80 by Sacramento County. The AG-80 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 2023). The 80-acre minimum parcel size in this district anticipates agricultural use.

Permitted uses within the AG-80 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 2023).[2] 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 2023).[3]

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 either accessory solar facilities, which are those necessary to meet on-

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

[3] 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.

site energy demands, or 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.[4]

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 2023).

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

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

Physically Divide an Established Community—There are no residential land uses within the solar development area of the project site. 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 is Consumnes, located 0.4 mile southwest of the western edge of the project site. The proposed project does not include any linear features, such as new roadways, or any physical feature that would create a barrier or would divide any existing community or hinder access to any existing community or residence. Improved (earthen or graveled) roads would be constructed throughout the site and between arrays. New overhead generation interconnection lines would be within the project site and/or transverse undeveloped parcels. These features would not physically divide an established community. Therefore, **no impact** would occur, and this topic is not addressed further in this EIR.

[4] 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.

IMPACT LUP-1: 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. Pursuant to CEQA Guidelines section 15125(d), an EIRs must discuss inconsistencies between a proposed project and applicable land use plans. A project's inconsistency with policies of an applicable plan does not necessarily mean that the project will have a significant environmental impact.

County General Plan policies relevant to the proposed project are listed above under "Regulatory Setting" and evaluated below related to consistency with the proposed project.

County General Plan policies EN-19, PF-76, and PF-77 establish that the County will support the development and use of renewable sources of energy resources. The proposed project would support County General Plan policies EN-19, PF-76, and PF-77 by providing a local supply of solar energy for the Sacramento County region.

General Plan Policy PF-80 indicates that the County will 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. As discussed in Chapter 3, "Aesthetics," the proposed project would not result in hazardous glare from any of the proposed solar arrays.

County General Plan policies PF-67 and PF-78 contain siting criteria for determining the location of production and distribution facilities and large megawatt solar facilities, respectively. Additionally, Policy PF-79 directs the County to design and develop new solar and other renewable energy facilities such that impacts to sensitive biological and cultural resources or farmlands are minimized. Policy PF-67 directs the County to minimize visual intrusion problems in areas of scenic and/or cultural value, such as scenic highways and scenic corridors. Chapter 3 of the EIR, "Aesthetics," presents a comprehensive evaluation of visual impacts, with a focus on the General Plan Policy CI-58, which establishes that the County will "[c]ontinue to provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road" – a portion of the segment of Scott Road where the County will continue to provide scenic corridor protection is within the project site. As presented in Chapter 3, "Aesthetics", visual impacts would be reduced through mitigation requiring the preparation and implementation of a Landscape Screening and Irrigation Plan and an Oak Woodland and Native Tree Plan; however, visual impacts related to scenic vistas and scenic corridors would be significant and unavoidable. Policy PF-78 describes that desirable sites for large multi-megawatt solar and other renewable energy facilities are those which minimize impacts to County resources, such as lands with existing appropriate land use designations, brownfield of other disturbed properties, and sites closest to existing facilities necessary for connection to the existing electrical grid. As further described in Chapter 16, "Alternatives", proximity to existing electrical distribution infrastructure was a key factor in determining the

proposed project location and in evaluating alternative sites, which were not feasible considerations for this project. Similarly, other infill and brownfield sites were evaluated and also determined to not be feasible alternatives sites for this project due to various factors. Most of the project site, including all of the areas proposed for solar panels, along with the substation, BESS, and maintenance yard, are zoned AG-80 (agricultural use, 80-acre minimum parcel size). The AG-80 zoning permits one single-family residence per parcel, all agricultural uses, and accessory dwellings for agricultural employees; most institutional uses, including large commercial solar facilities, are allowed within areas zoned AG-80 if a conditional use permit is approved by the County Board of Supervisors (Sacramento County 2023). The proposed project includes a request for approval of the necessary conditional use permit, and if approved, the project would be consistent with the existing zoning. Additionally, the proposed project would feed into the electrical grid through a gen-tie line that would extend approximately 1.3 miles to an existing SMUD 230 kV powerline.

In addition to the "desirable sites" for utility-scale renewable energy facilities described in the first section of Policy PF-78, this policy also describes other sites which may be used for siting renewable energy facilities after consideration of important natural and historic values of the land, including farmlands, habitat and other open space lands, scenic values, and cultural resources. Consistent with Policy PF-78, the proposed project is sited on land classified by the Department of Conservation as “grazing land” and would not be sited on high-quality farmlands, as further described in Chapter 4, “Agricultural Resources.” As discussed in Chapter 6, “Biological Resources”, oak woodlands, seasonal wetlands, vernal pools, and seasonally inundated wetlands and non-wetland waters are present on the project site and design considerations and mitigation measures have been included to reduce potential biological resource impacts to a less-than-significant level. However, cumulative impacts related to oak tree removal would be significant and unavoidable. As described above, impacts to scenic vistas associated with implementation and siting of the proposed project are evaluated in Chapter 3, “Aesthetics”, and would be significant and unavoidable. Potential impacts to cultural resources are discussed in Chapter 8 “Cultural and Paleontological Resources” and would be mitigated to a less-than-significant level. However, as discussed in Chapter 13 “Tribal Cultural Resources”, while significant impacts to unique and spiritually significant tribal cultural resources (TCRs) would be minimized through implementation of mitigation to ensure the proper treatment of TCRs, impacts would be significant and unavoidable. In summary, natural and historic values of the land as outlined in Policy PF-78 were considered in the siting of the proposed project and adverse physical impacts are addressed, and mitigated to the extent feasible, in the respective technical chapters of this EIR.

Additionally, the proposed project is consistent with County General Plan policy PF-79, as the proposed project would be sited on grazing land (see Chapter 4, “Agricultural Resources”), avoid sensitive biological resources to the extent possible (see Chapter 6, “Biological Resources”), and avoid and preserve in place cultural resources (see Chapter 8, “Cultural and Paleontological Resources”).

County General Plan policies PF-92, PF-93, PF-95, PF-96, and PF-97 contain guidance for the siting of transmission facilities such that impacts to biological, cultural, and visual resources are minimized, and areas such as those used for subsurface mining operations and recreation, historic, rural scenic highways, landscaped corridors, drainage basins, wetland mitigation, tree planting, and designated federal or state wild and scenic river systems are avoided. The proposed transmission lines run along the southern boundary of the Prairie City SVRA, which is an urban/developed land cover type; therefore, the proposed project is consistent with County General Plan policy PF-92. Additionally, as further described in the Chapter 6, "Biological Resources", impacts to native and non-native bird populations related to electrocution would be reduced with implementation of mitigation to implement guidelines for electrical infrastructure development of an Avian Protection Plan; therefore, the proposed project would be consistent with County General Plan policy PF-93. The proposed transmission lines would not be located in historic areas, landscaped corridors, drainage basins, wetland mitigation, tree planting, or designated federal or state wild and scenic river systems. The proposed transmission lines would be located approximately 0.8-mile west of Scott Road, which is considered a scenic corridor, and would run 1.3-miles west along the southern boundary of the Prairie City SVRA. The proposed transmission lines would interconnect with existing SMUD facilities. While County General Plan policy PF-95 recommends avoidance of recreation areas and rural scenic highways, these areas may be considered as options if facilities already exist; therefore, the proposed project would be consistent with County General Plan policy PF-95. Finally, the proposed project would be consistent with County General Plan policies PF-96 and PF-97, as the proposed transmission lines would be located approximately 0.8-mile west of Scott Road public right-of-way with varying topography, vegetation, and solar arrays between and would utilize monopole construction.

As described above, the project's environmental impacts and the project's consistency with other applicable plans are discussed in other resource and issue areas that are addressed in each technical chapter of this document, as appropriate. The 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. While the proposed project would result in significant and unavoidable impacts to visual resources, TCRs, and cumulative tree impacts, as described above, County General Plan policy PF-66 permits the Board of Supervisors and County Planning Commission to approve development projects for energy resources that are contrary to any of the policies of the Public Facilities element when justification is provided through findings. In accordance with Policy PF-66, findings would be adopted as part of the Final EIR for the proposed project. 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 adverse physical impacts beyond those addressed in detail in the environmental chapters of this document (i.e.,

agricultural resources, air quality, biological resources, cultural resources, etc.).[5] Therefore, this impact would be **less than significant**.

[5] "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).

12 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]

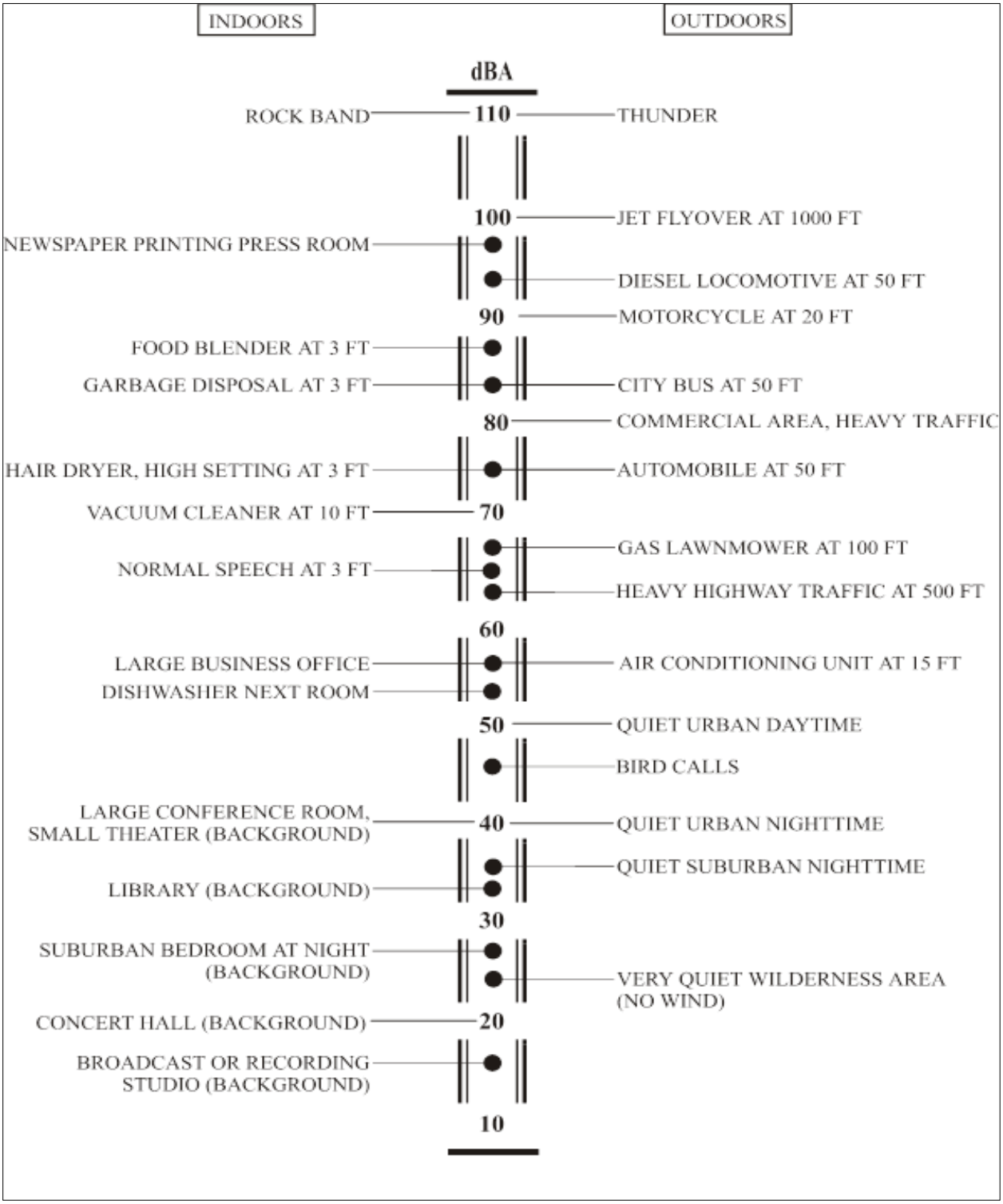
Table NOI-1. Subjective Reaction to Changes in Noise Levels of Similar Sources

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

Source: Egan 1988
Note: dBA = A-weighted decibels

[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



Source: Caltrans 2013
Notes:
dBA = A-weighted decibels

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 p.m. and 7 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 p.m. and 10 p.m., which are typically reserved for evening activities that require quiet. 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.
- **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 (USEPA 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 2020). 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

Source: Caltrans 2020
Notes:
In/sec=inches per second; PPV=peak particle velocity; VdB = Vibration Decibel

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)[a]
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

Source: FTA 2018.
Notes:
in/sec = inches per second; Lv = Vibration Level; PPV = peak particle velocity; VdB = Vibration Decibel.
[a] Root mean square (RMS) velocity calculated from vibration level (VdB) using the reference of one micro-inch/second.

EXISTING CONDITIONS

EXISTING NOISE-SENSITIVE RECEPTORS

Noise-sensitive receptors generally consist of receptors 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 receptors include occupants of nursing homes, schools, hospitals, libraries, childcare facilities, and places of worship.

The proposed project site is located in Sacramento County, east and west of Scott Road southeast of the Prairie City State Vehicle Recreation Area (SVRA). The nearest noise-sensitive receptor in the vicinity of the project site includes the occupants of the residential property at 3850 Scott Road in the central part of the project site. The Sacramento County Boys Ranch to the south of the project site closed in 2010 and is not currently in use, therefore it is not considered a potential noise-sensitive receptor for the purposes of this analysis.

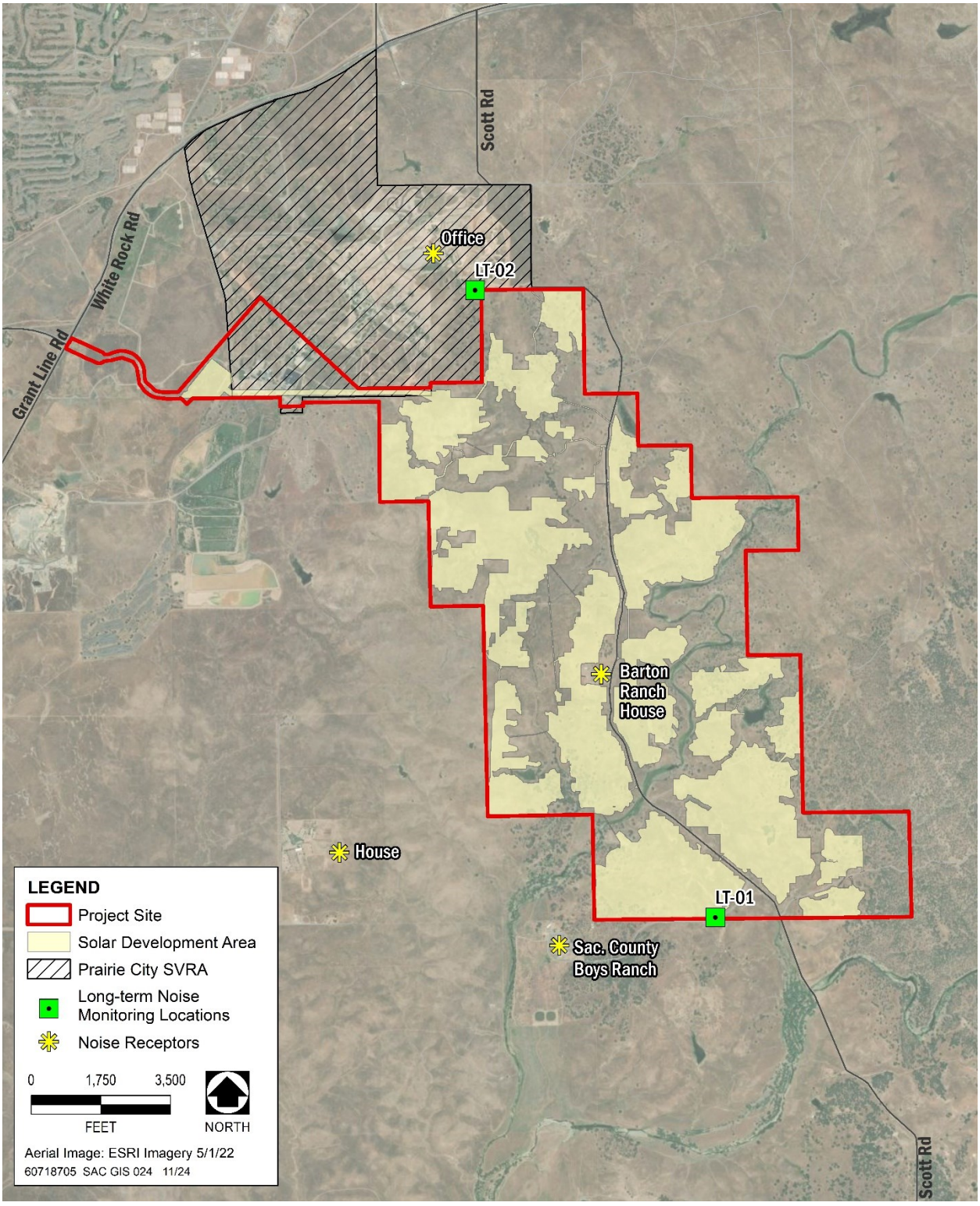
COMMUNITY NOISE SURVEY

A community noise survey was conducted on March 6th through March 7th, 2024, to document the existing noise environment at various locations within the vicinity of the proposed project site. The dominant noise source identified during the ambient noise survey was vehicular traffic on Scott Road and the activities at Prairie City SVRA.[4]

Community noise survey locations are shown in Plate NOI-2.

[4] Measurements of noise levels were taken in accordance with American National Standards Institute (ANSI) standards. Continuous 24-hour, long-term (LT) monitoring of noise levels was conducted at two locations, 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 ANSI for Type 1 sound-level meters (ANSI S1.4-1983[R2006]).

Plate NOI-2: Noise Monitoring Locations and Sensitive Receptors



Source: AECOM 2024

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-01	Southern Boundary	3/6/2024 – 3/7/2024	24 Hour	43	40 \ 59	36 \ 50
LT-02	Northern Boundary	3/6/2024 – 3/7/2024	24 Hour	52	53 \ 68	41 \ 52

Source: Data collected by AECOM, 2024.
Notes: dBA = 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.

Existing Noise Sources

The principal noise source near the project site is vehicular traffic on nearby roadways. Noise from the operation and maintenance of the Prairie City SVRA (represented by monitoring location LT-02) and noise from overhead aircraft also contribute to a lesser extent to the existing noise environment.

Existing vehicle traffic noise levels near the project site 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 within 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 receptors in the area are affected by existing traffic noise depends on their respective proximity to the roadways and their sensitivity to noise.

Table NOI-5: Summary of Modeled Levels of Existing Traffic Noise

Roadway	Segment From	Segment To	Distance	Noise Level, dB	Distance (feet) from Roadway Centerline to L_{dn} Contour		
					70 dB	65 dB	60 dB
Scott Road	White Rock Road	Latrobe Road	100 feet	66.1	41	129	408

Source: Data modeled by AECOM in 2024
Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level.

[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

REGULATORY SETTING

FEDERAL

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 (USEPA) 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 USEPA 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 damage in commercial and industrial areas is 70 dB 24-hour L_{eq} (both outdoors and indoors).

The USEPA's Office of Noise Abatement and Control was established to coordinate federal noise control activities. In 1981, USEPA 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 USEPA 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

[8] The USEPA 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 USEPA can, however, require other federal agencies to justify their noise regulations in terms of the Noise Control Act policy requirements.

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 at the request of the U.S. Environmental Protection Agency (FTA 2018). For fragile structures, the Committee of Hearing, Bio Acoustics, and Bio Mechanics 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 to 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

	Community Noise Exposure (CNEL/L_{dn}, dBA)			
Land Use Category	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+	

Source: OPR 2017

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.

California Department of Transportation

For the protection of fragile, historic, and residential structures, Caltrans recommends a threshold of 0.3 in/sec PPV for older residential buildings and 0.08 in/sec PPV for extremely fragile 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

Source: Caltrans 2020
Notes: in/sec = inches per second; PPV = peak particle velocity

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.

Policy 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.

Policy 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.

Policy 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.

Policy 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 Noise Element]

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

Source: County of Sacramento General Plan Noise Element 2017. Table 2.

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.

Table NOI-9. Requirements for Acoustical Analyses Prepared in Sacramento County

[Table 3 of the Sacramento County General Plan Noise Element]

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
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	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.

Source: County of Sacramento Code, Noise Control 1976
Notes: dB = decibels

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 in determining whether a project noise effect may be significant 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.

Caltrans vibration standards for large construction equipment are used by the County in evaluating the significance of groundborne vibration.

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 a.m. and 7 a.m.
Sundays and holidays	between the hours of 8 a.m. and 6 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.
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 seven miles west 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 is also one smaller local airport in the project vicinity: Rancho Murieta Airport (approximately three miles to the south). Because the project site is not 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 (shown in Plate NOI-2, above) 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 which were compared with applicable County standards shown in Table NOI-11 for determination of significance.

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)	Est Noise Level at 50 ft (L_{eq}, dBA)
Construction			
Perimeter Fence Installation	Front End Loader	79	75
	Pickup Truck	75	71
	Man Lift	75	68
Site Preparation	Grader	85	81
	Dozer	82	78
	Scraper	84	80
	Roller	80	73
	Dump Truck	76	72
	Dump Truck	76	72
	Tractor	84	80
	Blasting	94	84
Tree Removal	Hydra Break Ram	90	80
	Excavator	81	77
	Flat Bed Truck	74	70
	Front End Loader	79	75
Underground Work (Trenching)	Excavator	81	77
	Roller	80	73
	Pneumatic Tools	85	82
	Dump Truck	76	72
	Man Lift	75	68
	Blasting	94	84
PV System Installation	Crane	81	73
	Man Lift	75	68
	Dump Truck	76	72
	Generator	81	78
	Impact Pile Driver	101	94
	Pickup Truck	75	71
Energy Storage System	Crane	81	73
	Tractor	84	80
	Pickup Truck	75	71
	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)	Est Noise Level at 50 ft (L_{eq}, dBA)
Gen-Tie Construction	Dump Truck	76	72
Testing, Commissioning, Site Clean Up	Front End Loader Pickup Truck Man Lift	79 75 75	75 71 68
Decommissioning			
Perimeter Fence Removal	Crane Grader Man Lift	81 85 75	73 81 68
PV System Removal	Crane Man Lift Dump Truck Pickup Truck	81 75 76 75	73 68 72 71
Energy Storage System Removal	Crane Grader Man Lift	81 85 75	73 81 68
Site Cleanup and Restoration	Pickup Truck Grader Front End Loader	75 85 79	71 81 75

Sources: FHWA 2006, Dudek 2025, Data Compiled by AECOM, 2025.
Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; L_{eq} = the equivalent hourly average noise level.

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 a noise-sensitive receptor – the occupied residential property at 3850 Scott Road in the central part of the project site. As discussed below, this impact is potentially significant but can be reduced to less than significant with the implementation of required mitigation measures.

CONSTRUCTION EQUIPMENT NOISE

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 the noise-sensitive receptors and create a substantial temporary increase in ambient noise levels. The project applicant proposes 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).

Major noise-generating construction activities could include site grading and excavation, installation of infrastructure, blasting, paving, and landscaping. The highest construction noise levels, as shown in Table NOI-12 range between 81 to 94 dBA, L_{eq}, and are typically generated during blasting, grading, pile driving, and excavation, and lower noise levels range between 68 to 81 dBA, L_{eq}, typically occur during fence installation. These noise levels were calculated using FHWA reference levels (FHWA 2006).

Residences could be exposed to construction noise from on-site construction activity and off-site construction truck trips, such as movement of construction equipment on trucks along area roadways.

Section 6.68.090(e) of the County of Sacramento Code establishes conditions that are considered exempt from the associated provisions of the County Noise Ordinance, 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.

Construction Traffic Noise

In addition, 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 18-month construction period and would likely average 476 construction workers (952 total trips per day) during the peak construction phase, Photovoltaic (PV) System Installation. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 4 to 954 trips during the 10-month site preparation phase, averaging approximately 20 daily trips including the 16 daily vendor truck 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 2 dB at the nearest noise-sensitive receptors from Scott Road centerlines.

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
Scott Road	White Rock Road	Latrobe Road	100 feet	66.1	64.3	68.3	2.2

Source: Data modeled by AECOM in 2024
Notes: dB = decibels; L_{dn} = day-night average noise level.

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. Construction traffic noise would temporarily increase existing noise levels by approximately 2 dB and a 3-dBA increase is barely perceptible. Therefore, this impact is considered **less than significant**.

Blasting Noise

Blasting would occur during the site preparation and trenching construction phases. Construction of the project would include up to one blast per day for a total of 35 blasts. Potential blasting locations are included in Plate PD-6, Potential Blasting Areas. As shown in this figure, blasting would occur in specific areas of the site and not throughout the entire site. The project applicant has committed to avoiding blasting activities within 340 feet of the Barton Ranch structures (see Mitigation Measure NOI-2b). Blasing would only occur within areas subject to grading. The applicant provided a worksheet that estimates project-specific blasting noise levels, which considered the detonation charge and blasting characteristics of the project. This estimate concluded that the blasting would result in noise levels of up to 91.0 dB L_{eq} at 340 feet (Dudek 2024). These results are reported below in Table NOI-14.

Table NOI-14: Blasting Noise

Noise Level (dBA, L_{eq})	Distance
98.1	150 feet
93.7	250 feet
91.0	340 feet
87.6	500 feet
66	1.1 miles
53	5.1 miles
40	22.8 miles

Source: Data modeled by AECOM in 2024
Notes: dBA = A-weighted decibels; L_{eq} = the equivalent hourly average noise level.

Ambient Noise Increase

With respect to increase in ambient noise levels, 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. As shown, project construction noise levels would range from 68 dB, L_{eq} to 94 dB L_{eq}, at 50 feet. Noise from localized point sources (such as construction sites) typically decreases by 6 dB with each doubling of distance from source to receptor. Project construction noise levels would range from 68 dB, L_{eq} to 94 dB L_{eq} at the nearest noise-sensitive receptor. The nearest sensitive receptor is the occupied residential property at 3850 Scott Road in the central part of the project site. The property line of this residential use is approximately 50 feet from the project site on Scott Road (the residential structure is approximately 100 feet from the project site, but the property line is approximately 50 feet from the project site). The construction noise level experienced at the property line of this residential use was calculated using FHWA reference levels (FHWA 2006).

Blasting noise is estimated to be 98.1 dB L_{eq} at 150 feet. The project applicant has committed to avoiding blasting activities within 340 feet of the Barton Ranch structures (see Mitigation Measure NOI-2b). As shown in Table NOI-14, blasting noise level of 91.0 dB L_{eq} at 340 feet and would exceed the existing ambient noise levels of 40 to 53 dB L_{eq}, and the estimated existing noise level of 66 dB, L_{eq} at 100 feet from Scott Road.

Although noise would attenuate with distance, most project construction activities would still exceed the ambient levels and the County's exterior nighttime noise standard. 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 existing noise-sensitive receptors and create a substantial temporary increase in ambient noise levels. As a result, this impact is considered **potentially significant**. 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-1a. 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.
- Blasting activities shall be prohibited within 0.5 miles of off-site noise sensitive receptors, and shall be limited to the hours between 7 a.m. and 8 p.m. Monday through Friday.
- Construction equipment and equipment staging areas for equipment that generates noise levels of 70 dB or more at 50 feet shall be located as far as possible from nearby noise-sensitive receptors, shown in Plate NOI-2.
- 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 receptors 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.

NOI-1b. Prepare and Implement a Blasting Plan.

To minimize the noise and vibration impacts related to blasting activities, the applicant shall prepare a Blasting Plan for the proposed project for County review and approval that shall include the following information:

- Public Communication: Notify all sensitive receptors within 0.5 miles of blast locations of the timing of planned blasting at least two weeks in advance by mail, and include contact information with a daytime telephone number for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to reduce interior noise levels (e.g., closing windows and doors) shall also be included in the notification.
- If blasting activities occur within 0.5 miles of the occupied residential property at 3850 Scott Road within the project site, the notification provided as part of this measure shall include the option to receive temporary relocation for the residents of this residential property for the duration of blasting activities within 0.5 miles of this receptor.
- Blast Timing: Blasting shall be limited to the hours between 7 a.m. and 8 p.m. Monday through Friday.
- Blast Design: Optimize blast design parameters, such as charge size, delay intervals, rock preconditioning, and stemming, to reduce peak noise levels.
- Equipment Maintenance: Ensure all blasting equipment is well-maintained to prevent excessive noise from malfunctioning or inefficient machinery.
- Blast Mats: Use blast mats to cover the blast area, reducing airborne noise and debris.
- Noise Monitoring: Implement a noise monitoring program during blasting activities to ensure compliance with Chapter 6.68 of the County Code and apply additional sound-attenuating measures in real-time, if necessary. There are several real-time sound-attenuating measures that can be implemented, if noise monitoring during blasting activities indicates that noise levels exceed 55 dB at the property boundary of any noise-sensitive receptors. Some examples include:

  1. Adjust Blast Timing:

     - Modify the Blasting Schedule: Adjust the timing of blasts to avoid sensitive times of the day (e.g., early morning, late evening, or during periods when wind direction favors noise propagation towards sensitive receptors).
     - Avoid Adverse Weather Conditions: Postpone blasts during temperature inversions and when wind speeds and directions could enhance noise propagation.

2. Use Additional Blast Mats or Heavy Tarps:

    - Cover the blast site with additional Blast Mats or Heavy Tarps to reduce airborne noise and control fly-rock. The mats act as a physical barrier, absorbing some of the noise energy produced during blasting.
    - Increase Matting Coverage: If monitoring shows high noise levels, add mats or reposition for better coverage.

3. Modify Blasting Techniques:

    - Reduce Charge Size: By reducing the charge size per delay, noise levels can be lowered. This may require splitting the blast into smaller, sequential blasts (using decked charges or micro-sequencing).
    - Stemming Optimization: Increasing the amount or using different types of stemming materials can help reduce noise from blast holes. High-density materials like gravel can be more effective at noise attenuation.

4. Install Temporary Noise Barriers:

    - Mobile Noise Barriers: Erect temporary noise barriers or screens (e.g., noise curtains, portable barriers) close to the blast area to block direct line-of-sight noise transmission to noise-sensitive receptors.
    - Use Acoustical Blankets: Wrap acoustical blankets around machinery or hang along barriers to further reduce noise transmission.

5. Real-time Monitoring, Communication, and Alerts:

    - Set up automated systems that send alerts if noise levels exceed thresholds, allowing the blast crew to make adjustments immediately. This may include delaying the blast or making on-site adjustments.

6. Modify Blast Design:

    - Change the Blast Geometry: Altering the angle, depth, or configuration of the blast holes can influence the direction of the energy release, potentially reducing noise.
    - Use Delayed Detonation Patterns: Using precise, millisecond delays between charges can help control the release of energy, reducing the peak noise levels.

- Alternative Methods: Where feasible, explore the use of alternative rock excavation methods that generate less noise and vibration, such as hydraulic splitting or chemical expansion.
- Post-Blast Reporting: Provide post-blast reports to the County, detailing the noise and vibration levels recorded, any exceedances of thresholds, and actions taken to mitigate impacts.

Significance after Mitigation

With the implementation of Mitigation Measures NOI-1a and NOI-1b, impacts from temporary exposure of sensitive receptors to nighttime noise and blasting noise would be reduced to less than significant. This would entail eliminating certain construction activities at night (i.e., pile driving and blasting), 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 82 dB at 50 feet would be reduced to 50 dB exterior at 2,000 feet. These mitigation measures would preclude nighttime construction for certain construction activities within the project site (e.g., pile driving and blasting). Areas further interior to the perimeter of project site are sufficiently distant from sensitive receptors to comply with 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.

Additionally, by preparing and implementing a Blasting Plan, noise and vibration impacts would be reduced. As described above and in Chapter 2, "Project Description", blasting would be limited to specific blasting locations and would not occur throughout the entire site. Potential blast sites are included in Plate PD-6, Potential Blasting Areas. The unmitigated noise level from blasting is estimated to reach 98.1 dB L_{eq} at a distance of 150 feet. The applicant has committed to avoiding blasting activities within 340 feet of the Barton Ranch structures. The unmitigated noise level from blasting is estimated to reach 91.0 dB L_{eq} at a distance of 340 feet. The noise reduction values for blast mats and temporary noise barriers can vary depending on factors such as the type of material used, the specific blast conditions, and the configuration of the barriers. According to the *Blasting and Explosives Quick Reference Guide* by the International Society of Explosives Engineers, blast mats can reduce noise levels by 10 to 20 dB, depending on the material and installation technique (Dyno Nobel Inc. 2010). The *Noise Barrier Design Handbook* by the FHWA indicates that temporary noise barriers can typically reduce noise levels by 5 to 15 dB, depending on the height, material, and proximity to the noise source. Combined use of blast mats and temporary barriers can achieve 15 to 35 dB reduction when both measures are optimally applied. Conservatively assuming a 20 dB-reduction from these measures, blasting noise is estimated to be at the County's daytime threshold of 55 dB, at 0.5 miles. Additionally, by including the option to offer temporary relocation for the residents 3850 Scott Road within the project site for the duration of blasting activities within 0.5 miles of this noise sensitive receptor, short-term exposure of sensitive receptors to construction noise would be reduced. As a result, with implementation of

Mitigation Measures *NOI-1*a and NOI-1b, 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 have the potential to expose noise-sensitive receptors to groundborne noise and vibration levels that would exceed applicable standards that indicate human disturbance and damage to structures could result during blasting activities on-site, as detailed in the discussion that follows.

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 receptors (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-15 provides vibration levels for typical construction equipment.

Table NOI-15. Typical Vibration Levels for Construction Equipment

Equipment	PPV at 25 Feet (in/sec)	Approximate Lv (VdB) 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
Blasting	1.127	109
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

Sources: Caltrans 2020, FTA 2018.

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; VdB = Vibration Decibel; PPV = peak particle velocity

Caltrans has developed criteria that are commonly applied as an industry standard to determine the impacts of project vibration relative to structural damage and human annoyance. Caltrans has determined that the vibration level of 80 VdB (0.04 in/sec PPV) would be distinctly perceptible. Achieving vibration levels 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 producing the most vibration would include bulldozers, pile drivers, and blasting, which are detailed below:

- **Large 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 receptors (buildings) nearest to the construction site are the residential structures along Scott Road that would be approximately 100 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 70 VdB and 0.019 in/sec PPV, which would be less than the criteria of 80 VdB and 0.3 in/sec PPV recommended by Caltrans.
- **Vibratory Rollers.** 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 76 VdB and 0.046 in/sec PPV at a distance of 100 feet (the nearest sensitive receptors), which would be below the 0.3 in/sec PPV recommended by Caltrans for structural damage, and below the criteria of 80 VdB for human annoyance.
- **Pile Drivers.** Pile driving would occur on-site during the PV System Installation construction phase. 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 noise-sensitive receptors approximately 100 feet from the project construction activities, would attenuate to less than 86 VdB and 0.140 in/sec PPV, which would be less than the structural damage criteria of 0.3 in/sec PPV, however, it would be above the human annoyance criteria of 80 VdB recommended by Caltrans.
- **Blasting.** Blasting would occur during site preparation and trenching. Construction of the project would include up to one blast per day for a total of 35 blasts. Potential blasting locations are included in Plate PD-6, Potential Blasting Areas. As shown in this figure, blasting would occur in specific areas of the site and not throughout the entire site, and blasting activities would be prohibited within 340 feet of the structures located at 3850 Scott Road. Blasting would generate vibration levels that would attenuate to below the structural damage threshold of 0.3 in/sec PPV at a distance of approximately 340 feet and would attenuate to below the human annoyance threshold of 80 VdB at a distance of approximately 1,500 feet.

Therefore, short-term construction of the project would not exceed the threshold for structural damage at the residence at 3850 Scott Road, however, it would expose persons to vibration that could exceed the threshold for human annoyance. Therefore, this impact would be considered **potentially significant**.

Mitigation Measures

Implement Mitigation Measure NOI-1b: Prepare and Implement a Blasting Plan.

NOI-2a: Implement Vibration Control Measures.

The construction contractor(s) shall implement the following measures to reduce construction- and decommissioning-generated noise and vibration:

- The construction contractor/s shall use construction equipment that is as small as practicable, particularly pile drivers.
- The construction contractor(s) shall prohibit the use of pile drivers within 250 feet of existing off-site structures. If pile driving is necessary within 250 feet of on-site structures where vibration levels exceed human annoyance thresholds or create undue disturbance, the option for temporary relocation shall be provided to affected residents at no cost during the duration of these activities.
- The construction contractor(s) shall prohibit blasting and the use of pile drivers during nighttime (for blasting, these activities shall be limited to the hours between 7 a.m. and 8 p.m. Monday through Friday, and for pile driving, these activities 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) to avoid annoyance (refer to Mitigation Measure NOI-1a, above, for additional restrictions on blasting and pile driving activities).
- The construction contractor(s) shall designate a "noise and vibration disturbance coordinator" who shall be responsible for responding to any local complaints about construction vibration. The disturbance coordinator shall determine the cause of any vibration complaint (e.g., human annoyance and structural damage) and require that reasonable measures be implemented to correct the problem. The disturbance coordinator's telephone number shall be posted at the construction site for the entirety of the construction and decommissioning periods.

NOI-2b: Additional Vibration Controls for Blasting to Avoid Human Annoyance.

- **Structural Damage:** Blasting activities shall not occur within 340 feet of the on-site structures.
- **Human Annoyance:** Blasting activities shall not occur within 1,500 feet of occupied sensitive receptors unless mitigation measures are implemented to reduce vibration levels to less than 80 VdB. If blasting is conducted within 1,500 feet of occupied sensitive receptors, strategies shall be implemented, as needed, to achieve vibration levels below 80 VdB at occupied sensitive receptors, which may include:

    1. Reduce Charge Weight
        - Reduce the maximum instantaneous charge (MIC) needs to be reduced.

2. Optimize Blasting Patterns
    - Use decking or delayed detonations to split the total charge into smaller sections. This strategy reduces the effective charge weight per delay and ensures compliance with vibration criteria.
3. Use Blast Mats
    - Place blast mats over the blasting area to absorb and diffuse some of the vibration energy. Blast mats can reduce PPV levels by 10 to 15 percent, allowing slight flexibility in MIC, if used.
4. Verify Compliance for Vibration Levels in VdB
    - To ensure vibration levels meet the human annoyance threshold of 80 VdB, additional mitigation measures, such as optimizing delays or using mats, or relocation of the occupants may be necessary to reduce levels further.

Significance after Mitigation

Implementation of Mitigation Measure NOI-1b (Prepare and Implement a Blasting Plan) would further reduce noise and vibration impacts related to blasting activities by outlining specific strategies, such as optimizing blast timing, reducing charge sizes, and increasing stemming, to minimize vibration propagation. With these mitigation measures in place, project-related construction vibration levels off-site would be reduced to below both annoyance and structural damage thresholds. Implementation of Mitigation Measure NOI-2a would serve to minimize vibration levels on adjacent land uses by requiring a minimum distance between blasting and pile drivers and nearby off-site structures; by using smaller sized construction equipment; and by designating a noise disturbance coordinator who will be responsible for responding to any local complaints and addressing the issue related to the complaint. Blasting and the use of pile drivers are prohibited at night, when vibration annoyance is likely to disturb residents who are sleeping.[10] These mitigation measures would reduce project-related construction vibration levels for off-site sensitive receptors to below the applicable thresholds. Therefore, the impact of temporary construction vibration on off-site sensitive receptors would be **less than significant with mitigation**.

While Mitigation Measures NOI-1a and NOI-2a would be effective at reducing impacts for most off-site areas, there are limitations in feasibility when it comes to the residence at 3850 Scott Road, which is located within the project site and cannot maintain the required setback distance due to its proximity to construction activities. Mitigation Measure NOI-2b prohibits blasting within 340 feet of on-site structures in order avoid any structural damage. Due to the proximity, it is anticipated that pile driving and blasting vibration levels are estimated to exceed the annoyance thresholds at this specific location without additional mitigation measures. Implementation of Mitigation Measures NOI-2a and NOI-

[10] Vibration impacts are normally only assessed within the structure (and especially residential structure where people sleep), not at outdoor areas or the property line. Therefore, human annoyance from vibration would be assessed at the structure and interior uses.

2b would require additional measures to reduce the impacts to on-site residential receptors to levels below the human annoyance vibration thresholds. Additionally, by including offering the option of temporary relocation for the residents 3850 Scott Road within the project site for the duration of blasting activities within 0.5 miles of this receptor, short-term exposure of sensitive receptors to construction vibration (annoyance) would be reduced. As a result, the impact on the residence at 3850 Scott Road is considered **less than significant with mitigation**.

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.

Noise may be generated by equipment within the substation; typically, this includes switches, protection and control equipment, transformers, and the incoming transmission lines. The noise generated by transmission lines and switches were previously analyzed to be 25 dBA at 50 feet. Transformers within the substation would generate noise levels like those at the inverters. Substation switches do not generate an audible noise, and circuit breakers (70 dBA at 65 feet) would not be a common noise source because they would only operate for short periods of time during an emergency event to protect the switches and transformers within the substation. Additionally, the primary noise generator from the BESS facilities would be the air conditioning units. The BESS facilities would generally be set back from the property lines and located near the substation, and the nearest neighbor is the Prairie City SVRA. The Prairie City SVRA obtained a noise easement over a portion of the Barton Ranch to ensure that the noise generated by off-road-vehicle activities at Prairie City SVRA were accepted by the neighbors. The substation and BESS facilities, which are located along with the transmission line, are all within the noise easement of the Prairie City SVRA (Dudek 2023).

The project would include the installation of solar panels and associated facilities that include inverters, transformers, a gen-tie facility, a new substation, and switchyard. Table NOI-16 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-16 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-16: 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

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

Notes: dBA = A-weighted decibel(s); HVAC = Heating Ventilation and Air Conditioning; L_{eq} = Equivalent Sound Level; PV = photovoltaic

As shown on Table NOI-16, 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 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 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 receptors (which are depicted in Plate NOI-2).

Mitigation Measures

NOI-3. 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 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-3 would ensure, as the project proceeds through final design and permitting, that noise-generating facilities are properly designed and located—whether through appropriate distancing or enclosure—to maintain noise levels below the applicable County 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., 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**.

13 TRAFFIC AND CIRCULATION

INTRODUCTION

This chapter evaluates potential impacts resulting from the additional vehicles added to the roadway system during the 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).

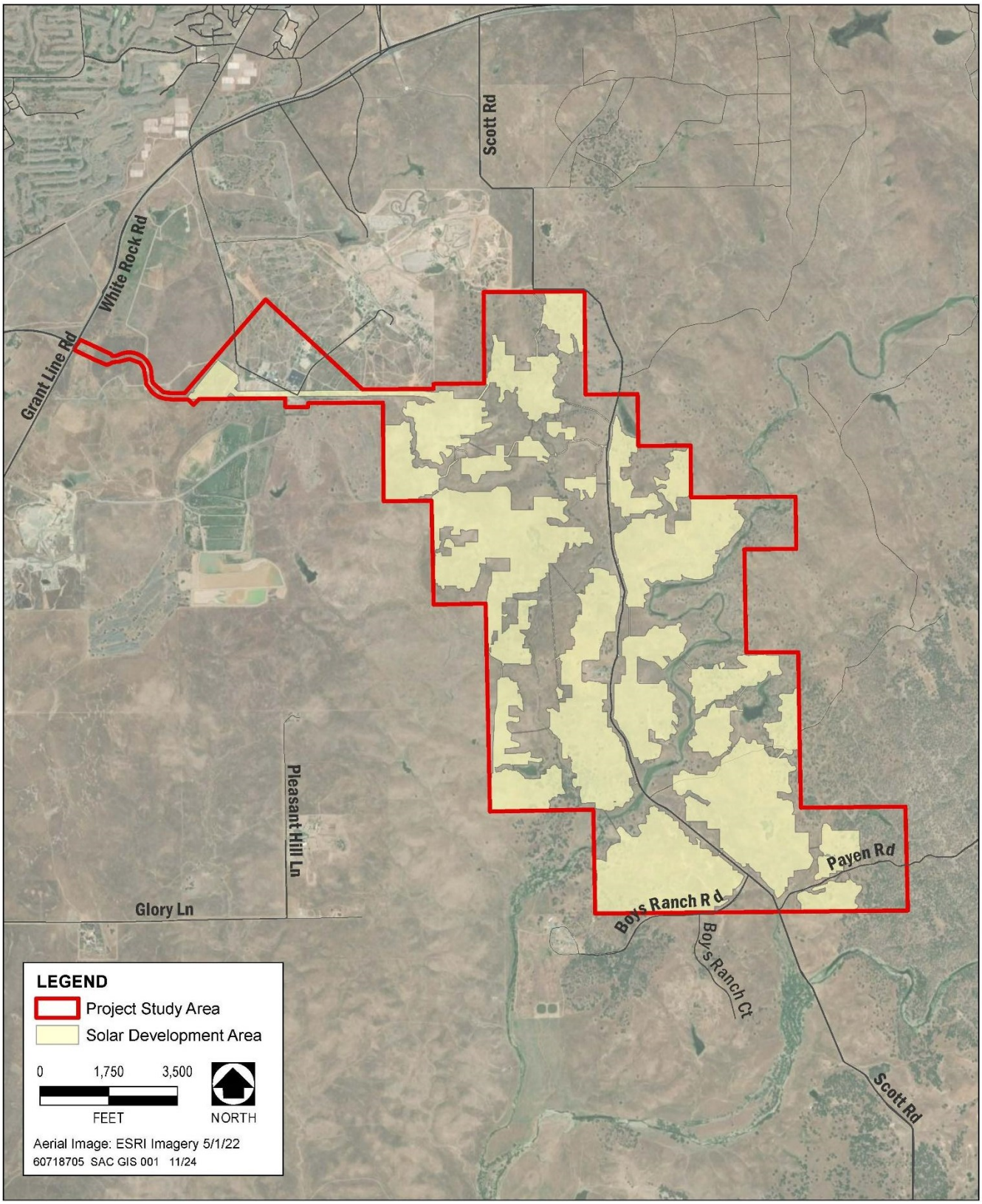
ENVIRONMENTAL SETTING

Local access to the project site would be from Scott Road. Access to components of the photovoltaic (PV) solar energy generating facility would be controlled through security gates at several entrances. Multiple gate-restricted access points would be used during construction and operation. Roadways within 1 mile of the project site are shown on Plate TC-1 and include:

- **Scott Road** is a two-lane roadway (one lane in each direction) between White Rock Road and Latrobe Road. Scott Road runs generally north-south through the middle of the project site parcels. It travels through rural lands. Measured 24-hour traffic volumes on Scott Road at White Rock Road ranged from 2,395 to 2,767 daily vehicles during measurements taken from 2018 through 2019 by Sacramento County (Sacramento County 2021). Peak-hour traffic is estimated to represent 10 percent of daily traffic, or 277 vehicles per hour. There has been no material change to traffic volumes on Scott Road within the project area since the 2018-2019 traffic measurements.
- The following roadway segments provide access to private property in the project vicinity: **Boys Ranch Road** is a two-lane roadway (one lane in each direction) west of Scott Road and runs generally east-west along the southern boundary of the project site parcels. It travels through rural lands.
- **Boys Ranch Court** is Boys Ranch Court is not an improved public roadway but appears to be an approximately 43-foot-wide private road easement, accompanied by public utility easements. The road runs south of Boys Ranch Road and travels through rural lands, generally along the southern boundary of the project site parcels. This easement may provide access to adjacent properties but does not constitute a formal two-lane roadway.
- **Payen Road** does not appear to be an improved public roadway but rather a private road easement running generally east-west along the southern boundary of the project site parcels. The easement may include provisions for access and public utility easements and traverses through rural lands east of Scott Road.

No bus stops, pedestrian, or bicycle facilities are located near the project site (Sacramento County 2022). The 2022 Sacramento County Active Transportation Plan shows an existing Class II bicycle lane on White Rock Road, northwest of the Prairie City State Vehicular Recreation Area.

Plate TC-1: Roadways in the Project Vicinity



Source: Dudek 2024, Adapted by AECOM 2024

REGULATORY SETTING

The following provides a summary of pertinent transportation plans, programs, policies and ordinances.

FEDERAL

There are no federal laws or regulations that are relevant to potential transportation impacts of the project.

STATE

There are no state laws or regulations that are relevant to potential transportation impacts of the project. The CEQA Guidelines provide that for land use projects, “a project’s effects on traffic delay shall not constitute a significant impact.” (CEQA Guidelines, Section 15064.3, subd. (a).) vehicle “Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.” (CEQA Guidelines, Section 15064.3, subd. (b)(1).) A lead agency has discretion to determine the appropriate methodology to measure vehicle miles traveled (VMT). (See discussion below regarding methodology adopted by the County of Sacramento.)

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 2020, amended 2022) 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 policies related to transportation and circulation may pertain to the proposed project. Additional General Plan policies related to scenic corridors and scenic highways listed in the Circulation Element that may pertain to the proposed project are described in more detail in Chapter 3, “Aesthetics”. The associated environmental impacts related to these policies are addressed in the Impacts and Analysis section further below.

Policy CI-10. Land development projects shall be responsible to mitigate the project’s adverse impacts to local and regional roadways.

SACRAMENTO COUNTY ACTIVE TRANSPORTATION PLAN

The 2022 Sacramento County Active Transportation Plan shows a recommended Class II bicycle lane on White Rock Road between the El Dorado County line and the intersection with Grant Line Road, a new Class II bicycle lane on the entire stretch of Scott Road, and a new Class I facility approximately 1 to 1.5 miles east of, and parallel to Scott Road.

Transportation Improvement and Program Guide (TIPG) and Capital Improvement Plan

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 County updates the Capital Improvement Plan, which includes transportation improvements, annually and the most recent Capital Improvement Plan includes improvements implemented between 2024 and 2029.

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 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

During the approximately 18-month construction period, the proposed project will require daily trips for commuting of the construction workforce, for movement of construction equipment, and for hauling. The number of workers expected on-site during construction of the project would vary over the construction period and would average approximately 16 to 476 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 two to 40 one-way trips, averaging approximately 11 daily one-way trips across the construction phases. Haul truck trips would also vary with different construction phases but would range from seven daily one-way trips across the construction phases, and would peak with 57 daily one-way haul truck trips during the testing, commissioning, site cleanup phase. 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. During decommissioning, average daily worker one-way trips would be approximately 82 with a peak of 200, average equipment and supply trips would be 18 with a peak of 32, and average haul truck trips would be 50 with a peak of 52.

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to traffic and circulation 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 AND DECOMMISSIONING

Regionally, access to the project site would be provided primarily by U.S. Highway 50. Local access to the project site would be from Prairie City Road and Scott 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 57 daily construction-related truck trips for delivery of materials and hauling would be spread over an 8-hour workday during the peak period of construction in terms of trip generation, which is during site preparation. In addition, a maximum of 476 worker trips would occur during the a.m. and p.m. hours before and after each workday during the peak construction phase, resulting in a total of up to 1,009 daily vehicle and truck trips added each day to local roadways during the peak trip-generating phase of construction. If the equipment and materials delivery and haul trips are spread evenly across an eight-hour workday, and the worker commute trips occur during the first and last hour of the eight-hour workday, the peak hourly trip generation would be approximately 483.

Existing traffic volumes along Scott Road at White Rock Road range from 2,395 to 2,767 total trips per day (Sacramento County 2018). Project construction trips represent a short-term increase in daily traffic of about 36 to 42 percent on Scott Road. The effect on daily and peak-hour traffic volumes would be temporary, limited to the estimated 18-month construction period, and the additional vehicles would not substantially alter existing roadway capacity. Given the limited duration of construction activity, 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. According to County's *Transportation Analysis Guidelines*, the LOS C or D capacity for a two-lane, rural roadway with access and characteristics similar to Scott Road typically ranges from 3,400 to 6,000 vehicles per day (Sacramento County 2020). Even with the temporary increase in construction traffic, total daily volumes on Scott Road would remain well below this capacity range, suggesting that the roadway would continue to operate at an acceptable service level during construction. Furthermore, in accordance with the County's *Transportation Analysis Guidelines*, to the extent that LOS is temporarily degraded by short-term construction activities consistent with CEQA Guidelines section 15064.3, the County would address the issue in terms of General Plan consistency rather than as an environmental impact subject to CEQA analysis and mitigation.

During the 12-month decommissioning phase, up to 52 daily truck trips would be required for the removal of materials and equipment. Additionally, a maximum of 200 worker trips would occur during the a.m. and p.m. hours before and after each workday. This results in a total of up to 452 daily vehicle and truck trips added each day to local roadways during the peak trip-generating phase of decommissioning. Assuming that the truck trips are spread evenly over an 8-hour workday and the worker commute trips occur during the first and last hour of the workday, the peak hourly trip generation would be approximately 206 trips.

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 on existing facilities (Sacramento County 2022). Scott Road, located in Sacramento County, is a rural roadway that does not have designated bike lanes. Cyclists often use this road for recreational purposes, especially during events like the annual "Great Scott Road Ride," where sections of Scott and White Rock roads are temporarily closed to motor vehicles to promote cycling. However, under normal conditions, cyclists share the road with vehicular traffic. Given the lack of dedicated bike lanes and the rural nature of Scott Road, Mitigation Measure TC-3 below requires the applicant to submit to the County a traffic control plan including standard construction traffic management signage to notify drivers and cyclists to exercise caution and be prepared for varying road conditions. 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 up to 10 daily trips generated during operations for the commutes and performance of regular inspection and maintenance activities would not be considered substantial. An additional 32 daily trips are assumed for water for panel washing and grazing activity for a total of approximately 42 trips per day. The additional daily trips during operations represents less than one percent of the existing daily trips on White Rock Road at Scott Road and approximately two percent of the existing daily trips on Scott Road at White Rock Road. This change does not have the potential to substantially increase traffic volumes and adversely 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.

As noted previously, the 2022 Sacramento County Active Transportation Plan shows a recommended Class II bicycle lane on White Rock Road between the El Dorado County line and the intersection with Grant Line Road, a new Class II bicycle lane on the entire stretch of Scott Road. The additional 42 daily trips resulting from the proposed project would not interfere with the use of these new facilities.

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, Operation, and Decommissioning

The Sacramento County *Transportation Analysis Guidelines* (Sacramento County 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 – The project 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 and 32 vehicle trips. 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) 230 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 (or decommissioning) 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. Chapter 5, "Air Quality" includes an evaluation of the air quality and greenhouse gas effects of the project, including emissions associated with vehicle trips during construction and operation. 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 approved 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. As documented above, because of the limited number of trips generated by project construction and operations, 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 AND DECOMMISSIONING

Primary access to the project site would be from Scott 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 and decommissioning to facilitate the construction process. These facilities may include construction trailers, temporary septic systems or holding tanks, parking areas, material receiving / storage areas, construction power service, recycling / waste handling areas, and others. However, these facilities and associated construction and decommissioning activities would be limited to the project site and are not expected to directly impact surrounding public roadways.

While project construction and decommissioning 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 and decommissioned, 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-, 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 Scott Road right-of-way would be temporarily occupied or altered during construction or decommissioning. 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-3. *Prepare and Implement Traffic Control Plan.*

> To address potential traffic hazards during construction and decommissioning, 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. The 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, with a focus on safety for cyclists on Scott Road. 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 and decommissioning 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 AND DECOMMISSIONING

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. Additionally, as discussed in Chapter 2, "Project Description," lock boxes would be placed at all gated entrances to always allow access to emergency services during construction, operation, and decommissioning.

OPERATION

Access to the project site would be from Scott 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 estimated to not exceed 42 trips per day. As discussed in Chapter 2, "Project Description," lock boxes would be placed at all gated entrances to always allow access to emergency services during construction, operation, and decommissioning. As a result, **no impact** on emergency access would result from project operations.

14 TRIBAL CULTURAL RESOURCES

INTRODUCTION

This chapter describes the environmental and regulatory setting for tribal cultural resources (TCRs) in the project site and surrounding area, identifies and analyzes impacts to TCRs from implementation of the Coyote Creek Agrivoltaic Ranch project (proposed project), and recommends mitigation measures to reduce or eliminate significant impacts. Cultural resources other than TCRs are discussed in Chapter 8, "Cultural and Paleontological Resources."

The County released a Notice of Preparation (NOP) for this Environmental Impact Report (EIR) on January 19, 2022. Since publication of the NOP, written and verbal comments have been received from Wilton Rancheria, United Auburn Indian Community (UAIC), Ione Band of Miwok Indians, and Shingle Springs Band of Miwok Indians. Early in this inter-governmental consultation process, the tribes requested the County to identify and analyze project impacts to TCRs in consideration of tribal knowledge and other information obtained through continued tribal consultation. In their initial comment letter dated February 10, 2022, and in response to the NOP, UAIC specifically listed their recognition of TCRs as including (but not limited to) Indigenous archaeological sites, sacred lands, sacred sites, Traditional Cultural Properties, midden and/or anthropogenic soils, burials, cremations, and all related burial or ceremonial items, burial soils, isolated indigenous objects/artifacts, cultural landscapes, native plants, and plant gathering areas. Responses received on the NOP are included as Appendix PD-1 and other public comment(s) received prior to the NOP release date are included as Appendix PD-2.

In recognition of these comments received early in the intergovernmental consultation process, the County, applicant, and consulting tribes participated in extensive consultation over a period of approximately 3 years. Tribal coordination has primarily occurred directly between the County, consulting tribes, and the applicant. During government-to-government consultation, culturally affiliated tribes identified TCRs within the project site and also outlined the importance of the Tosewin Region and its contribution to past tribal activities and history. This information from the tribes has been captured in a draft TCR Avoidance and Minimization Plan (AMP), which has been shared with consulting tribes, and which provides guidelines for the avoidance and protection of tribal and archaeological resources, as well as the preparation of an ethnography of the Tosewin Region based on oral interviews and archival information from the UAIC, Shingle Springs Band of Miwok Indians, Ione Band of Miwok Indians, and Wilton Rancheria culturally affiliated tribes.

A TCR is defined by CEQA as a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American tribe that either qualify as a historical resource or are a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be eligible for listing on the California Register of Historic Places.

Historical resources, unique archaeological resources, or non-unique archaeological resources may also be TCRs if they meet these criteria.

A landscape that meets the above criteria is a TCR to the extent that it is geographically defined in terms of its size and scope.

TCRs may contain physical cultural remains or may be places within a landscape.

Native American Tribes

The region surrounding the project site would have been near the historical nexus of Plains Miwok and Nisenan tribal territories. Tribal participants in AB 52 intergovernmental consultation for this project were the UAIC, Ione Band of Miwok Indians, Shingle Springs Band of Miwok Indians, and Wilton Rancheria. See Chapter 8, Cultural and Paleontological Resources, for the precontact and ethnographic context of the project site and surrounding area.

United Auburn Indian Community

The UAIC is a federally recognized Tribe comprised of both Miwok and Maidu (Nisenan) Tribal members who are traditionally and culturally affiliated with the greater Sacramento area. The Tribe has deep spiritual, cultural, and physical ties to their ancestral land and are contemporary stewards of their culture and landscapes. The Tribal community represents a continuity and endurance of their ancestors by maintaining their connection to their history and culture. It is the Tribe's goal to ensure the preservation and continuance of their cultural heritage for current and future generations.

The reestablishment of the United Auburn Indian 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 2024).

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 (UAIC 2024).

In 1991, surviving members of the Auburn Band reorganized their tribal government as the United Auburn Indian Community 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 2024). In 2002, UAIC acquired 49.21-acres under a land trust with the Bureau of Indian Affairs (BIA) to build and operate a casino (BIA 2002 Feb 5). 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* 2018 Sep 12).

Ione Band of Miwok Indians

The Ione Band of Miwok Indians is comprised of Northern Sierra Miwok and Nisenan peoples. For thousands of years, their people have lived on the lands that today make up Amador County and the surrounding area. Following restoration to federal recognition in 1994, the Tribe has worked tirelessly to acquire, and restore to sovereign status, lands they once called their own. In March 2020 they successfully restored their first trust lands in Northwestern Amador County. Restoration of homelands has ushered in a new era for the Ione Band, as they continue to flourish as a government and a people, and to build a community to support many generations to come (Ione Band of Miwok Indians 2024).

Shingle Springs Band of Miwok Indians

The Shingle Springs Band of Miwok Indians is a federally recognized Tribe. Members are descendants of the Miwok and Southern Maidu “Nisenan” Indians who thrived in California’s fertile central valley for thousands of years before contact with Europeans. Although early encounters between Indians and Spanish colonizers in the late 1700s resulted in some violence and spread of disease, it was not until the California gold rush of 1849 that the Miwok and Southern Maidu “Nisenan” Indians experienced devastating and sustained genocide. As a result of the gold rush, Indians in northern California lost the use and control of their aboriginal territories, which forced whole tribes to scatter. The impact of the gold rush era is revealed in population statistics. In 1769, an estimated 310,000 native people lived within the borders of the modern-day California. By 1913, only 17,000 Indian people remained in the area.

Despite these harrowing obstacles, Miwok and Southern Maidu “Nisenan” Indians survived the 19th century. In 1916, while conducting a census of Indian people, an agent of the Department of the Interior discovered Indians living along the Sacramento River. The federal government called these native peoples the “Sacramento-Verona Band of Homeless Indians” and set about acquiring land for them. That land is known as the Shingle Springs Rancheria, just off present-day U.S. Highway 50. In 1970, the Tribe formally organized under their Articles of Association and set up home sites on the Rancheria. In 1976, the Tribe’s Articles of Association were approved by the Secretary of the Interior. Since the adoption of the Tribe’s Articles of Association in 1976, the Tribe has sought to honor and protect its territory and cultural heritage to benefit future generations.

The Rancheria has changed significantly from its humble beginnings and today is a bustling, vibrant community. The Tribe is financially independent and has diverse enterprises and programs including, most notably, Red Hawk Casino, the Shingle Springs Health & Wellness Center and the Tribal Temporary Assistance for Needy Families (TANF) Program. Its Business Development Board is dedicated to developing other enterprises for the Tribe’s long-term sustainability (Shingle Springs Band of Miwok Indians 2024).

Wilton Rancheria

Members of Wilton Rancheria are descendants of the Penutian linguistic family identified as speaking the Miwok dialect. The Tribe's Indigenous territory encompasses Sacramento County and the land the Tribe's ancestors inhabited were 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 2024). 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, 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 U.S. District Court Judge restored Wilton Rancheria as a Federally Recognized Tribe in 2009. The Tribe passed their constitution in 2011. It stated its four branches of government that include the Office of the Chair & Vice Chair, the Tribal Council, a Tribal-Court, and the General Council. The Tribe's administration office is located in the City of Elk Grove, Sacramento County in California (Wilton Rancheria 2024).

Native American Consultation and Coordination

The County conducted government-to-government consultation with traditionally culturally affiliated tribes in accordance with Assembly Bill (AB) 52. County Planning and Environmental Review received requests to consult from United Auburn Indian Community, Ione Band of Miwok Indians, Shingle Springs Band of Miwok Indians, and Wilton Rancheria. Tribal consultation for this project was conducted in good faith and with thorough communication efforts spanning three years of correspondence, meetings, site visits, and direct partnerships with tribal representatives. Tribal coordination has primarily occurred directly between the County, consulting tribes, and the applicant. During government-to-government consultation, culturally affiliated tribes identified TCRs within the project site and outlined the importance of the Tosewin Region (discussed below) and its contribution to past tribal activities and history. This information from the tribes resulted in a proposed TCR AMP. In addition to providing guidelines for the avoidance and protection of tribal and archaeological resources, the TCR AMP provides for the preparation of an ethnography of the Tosewin Region based on oral interviews and archival information from the UAIC, Shingle Springs Band of Miwok Indians, Ione Band of Miwok Indians, and Wilton Rancheria culturally affiliated tribes.

The County engaged in consultation with all four culturally affiliated tribes between January 2022 and December 2024. Site visits occurred with the consulting tribes on June 1 and June 2, 2022, and several subsequent meetings have been held with tribal representatives. Attendees included tribal representatives from Shingle Springs Rancheria (June 1), Wilton Rancheria (June 1 and June 2), and UAIC (June 2). Agency representatives from the County and Sacramento Municipal Utility District (SMUD) were present. Lastly, representatives from the project applicant team and Dudek were also present and available to discuss preliminary design plans and review the archaeological findings to date.

The visits included surveys (both pedestrian and forensic canine) of two indigenous sites with potential human remains that intersect the project site. The June 2 visit also included a visit to newly recorded bedrock milling features and areas outside of the solar development area, but within the portion of the project site near the possible historic-era reburial location of Walltown Nisenan Chief Rabbit George. The specifics of this visit and information provided by these consulting tribes are on file with the County.

Environmental Setting

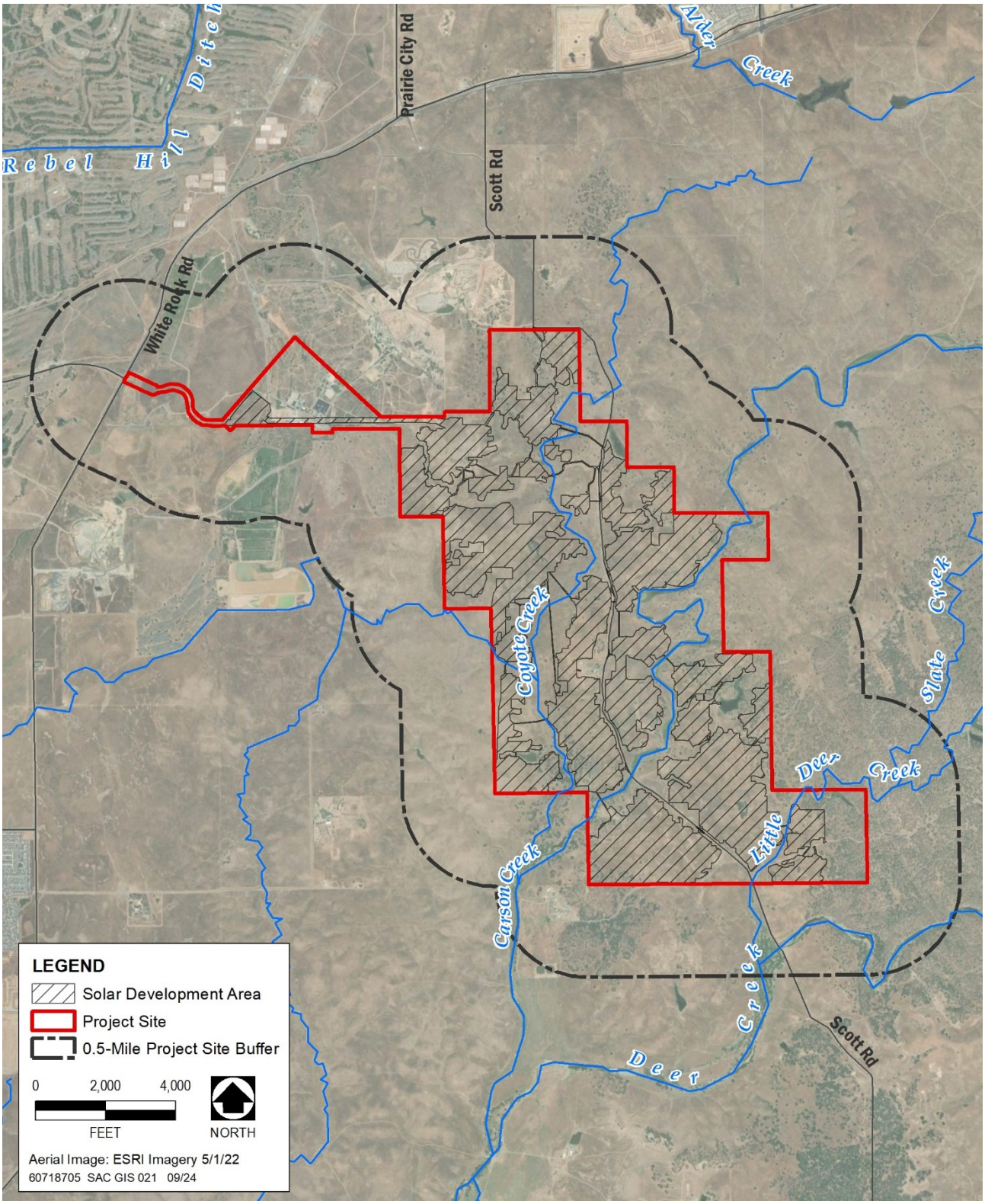
Refer to the "Environmental Setting" section of Chapter 8, "Cultural and Paleontological Resources," of this EIR for an overview on the Pre-Contact Native American history and subsequent land use history of the project site. Below is a summary of data from Chapter 8, relevant to understanding archaeological TCRs, followed by oral and ethnographic accounts of Indigenous culture, as well as the means and methods by which TCRs are recognized and evaluated.

Records Search Results

A records search of the 2,704-acre project site[1] (Plate TCR-1) and a 0.5-mile radius was completed by staff at the North Central Information Center (NCIC) of the California Historical Resources Information System, located at California State University, Sacramento, on June 17, 2021 to identify cultural resources, historic-age built environment resources, and TCRs. The records search included reviews of previously conducted studies, the National Register of Historic Places (NRHP), CRHR, the California Inventory of Historic Resources (1976), California Historical Landmarks (1996), California Points of Historical Interest (1992 and updates), the Historic Property Data File, and historic General Land Office and USGS maps.

[1] The Coyote Creek Agrivoltaic Ranch Project site (project site) consists of 2,704 acres which exceeds the limits of impact for the proposed photovoltaic facility. The "solar development area" is the 1,412-acre portion of the project site where project components and site disturbance activities related to construction and operation of the proposed photovoltaic solar energy facility could occur (i.e., the limits of direct impact). The solar development area is synonymous with the "Project Area of Potential Effects (APE)" in the *Archaeological Resources Inventory Report for the Coyote Creek Agrivoltaic Ranch Project* (Archaeological Resources Inventory Report) prepared by Dudek in February 2024.

Plate TCR-1: Project Site and Solar Development Area with 0.5-Mile Project Site Buffer



The records search identified eight previously recorded ancestral Native American archaeological sites, that are presumed to satisfy the definition of a TCR under Public Resources Code sections 21074 and 5024.1 and are therefore considered TCRs for the purposes of this EIR. The sites recorded within the project site, but excluded from the solar development area, include possible burial locations and habitation debris, a lithic scatter, and bedrock milling features.

Ethnographic Context

When the first European explorers entered the region between 1772 and 1821, an estimated 100,000 people, about one third of the state's native population, lived in the Central Valley (Moratto 1984). Anthropologists have most commonly grouped the native peoples of California by the known roots of their spoken language on the theory that language is relatively straight forward, and because peoples speaking the same language tend to have other cultural traits in common (Anderson 2005). However, the bonds between people that share a language are often less important than those created by other sorts of relationships. This was especially true in most of Native California, where the nature of trade, warfare, cooperation, and almost every other kind of interaction depended on whether the individuals involved belonged to the same sociopolitical group, not whether they spoke a common language (Anderson 2005). At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts (Kroeber 1925). Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction (Rosenthal et al. 2007). The Central area (as defined by Kroeber 1925) encompasses the project site and includes the Nisenan or Southern Maidu (ECORP 2024).

Ethnographically, the project site falls within the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. Nisenan inhabited the drainages of the Yuba, Bear, and American rivers, and also the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid to high elevations of the western flank of the Sierra Nevada to the east (Wilson and Towne 1978). The territory extended from the area surrounding the current City of Oroville on the north to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and, in the east, it extended to a general area located within a few miles of Lake Tahoe (ECORP 2024).

Prior to contact, many language groups, particularly in north central California, were subdivided into politically and economically independent groups consisting of several unrelated families that collectively owned and defended a specific tract of land. Alfred Kroeber called these groups "village communities" or "tribelets". Nisenan (meaning "from among us" or "of our side") are members of the Maiduan Family of the Penutian stock and are generally divided into three groups based on dialect differences: the Northern Hill (mountain) Nisenan in the Yuba River drainage; the Valley Nisenan along the Sacramento River; and the Southern Hill (foothills) Nisenan along the American River (Beals 1933; Kroeber 1925; Wilson and Towne 1978). Individual and extended families owned hunting and gathering grounds, and trespassing was discouraged (Kroeber 1925; Wilson and

Towne 1978). Residence was generally patrilocal, but couples maintained choice in the matter (Wilson and Towne 1978).

Tribelet chiefs tend to be hereditary, with the chieftainship being the property of a single patrilineage within the tribelet. Tribelet populations of Valley Nisenan were as large as 500 persons (Wilson and Towne 1982), while foothill and mountain tribelets ranged between 100 persons and 300 persons (Levy 1978; Littlejohn 1928). Each tribelet owned a bounded tract of land and exercised control over its natural resources (Littlejohn 1928). Beals (1933) estimated that Nisenan tribelet territories averaged approximately 10 miles along each boundary, or 100 square miles, with foothill territories tending to encompass more area than mountain territories. Littlejohn (1928) noted that in many instances, these boundaries were indicated by piles of stones. Regardless, Nisenan groups tended to stay within their village areas except during the summer season when groups of people would sojourn into the mountains to hunt and gather (Littlejohn 1928).

The basic social and economic group for the Nisenan was and is the family or household unit. The nuclear and extended family usually lived in proximity to each other as a group. These family units were combined into distinct village or hamlet groups, each largely composed of consanguine relatives (Beals 1933). Lineage groups were important political and economic units that combined to form tribelets, which were the largest socio-political unit identified for Nisenan (Wilson and Towne 1978). Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief (ECORP 2024).

Indigenous Lifeways

Prior to European contact, Nisenan practiced seasonal migration, a subsistence strategy involving moving from one area or elevation to another to harvest plants, fish, and hunt game across contrasting ecosystems that were in relatively close proximity. Valley Nisenan generally did not range beyond the valley and lower foothills, while foothill and mountain groups ranged across a more extensive area that included jointly shared territory whose entry was subject to traditional understandings of priority of ownership and current relations between the groups (d'Azevedo 1963). Although tribal members no longer practice seasonal migration, seasonally available natural resources are nonetheless important in maintaining connection with the land, with local tribes dedicated to preserving and protecting the cultural and ecological heritage of their ancestors.

During most of the year, prior to the cultural devastation of the Gold Rush, Nisenan usually lived in permanent villages located below about 2,500 feet elevation that generally had a southern exposure, were surrounded by an open area, and were located above, but close to watercourses (Littlejohn 1928). Beals (1933) noted that permanent villages in the foothills and mountains were usually located on high ground between rivers. Valley villages were also usually located on raised areas to avoid flooding. Littlejohn (1928) stated that at one time or another there were settlements located on every small stream within Nisenan territory, but permanent villages were not located in steep, dark, narrow canyons of large rivers, or at altitudes where deep snows persisted throughout the winter.

In fact, permanent occupation sites above 3,500 feet elevation were only located in protected valleys (Littlejohn 1928).

Nisenan built residential dwellings, ceremonial structures, semi-subterranean sweat lodges, and menstruation huts (Wilson and Towne 1978). The typical hill-and-mountain dwelling was the conical bark house made by overlapping three or four layers of bark with no interior support. A thatched house was used at lower elevations, consisting of a conical framework of poles that was covered by brush, grass, or tules. Semi-subterranean earth lodge roundhouses were also built by hill and mountain groups and used for ceremonial gatherings, assemblies, local feasts, and for housing visitors (Beals 1933; Levy 1978). These ancestral methods and materials are used by tribal members today in the construction of ceremonial structures.

Flaked-stone and groundstone tools were common among the ethnographic Nisenan and included knives, arrow and spear points, club heads, arrow straighteners, scrapers, rough cobble and shaped pestles, bedrock mortars, grinding stones (metates), pipes, charms, and short spears (Beals 1933; Wilson and Towne 1978). Beals (1933:341) also noted that certain colored stone points were considered *lucky* and could be traded for four or five other projectile points. In addition, obsidian was highly valued and imported. Ethnographic Nisenan informants stated that obsidian only came from a place to the north, outside of Nisenan territory (Littlejohn 1928:32). Littlejohn (1928) also noted that soapstone was used for bowl mortars, although informants of Wilson and Towne (1978) claimed that neither they nor their ancestors made mortars (ECORP 2024). Trade in these raw materials, and the production and distribution of finished lithic tools, is an important element of maintenance of traditional lifeways by modern Nisenan and Miwok and, more broadly, in the maintenance of intertribal relationships throughout California.

Wood was used for a variety of tools and weapons, including both simple and sinew-backed bows, arrow shafts and points, looped stirring sticks, flat-bladed mush paddles, pipes, and hide preparation tools (Wilson and Towne 1978). Cordage was made from plant material and used to construct fishing nets and braided and twined tumplines. Soaproot brushes were commonly used during grinding activities to collect meal or flour. Specialized food processing and cooking techniques included the grinding and leaching of ground acorn and buckeye meal; burning of umbelliferae, a plant with cabbage-like leaves, to obtain salt; and roasting various foods in earth ovens (d'Azevedo 1986; Wilson and Towne 1978). Both hill and valley groups used the bedrock mortar and pestle (both rough cobble and shaped) to grind acorns, pine nuts, seeds, other plant foods, and meat. A soaproot brush was used to sweep ground meal into mortar cups and collect flour. Fist-sized, heated stones were used to cook or warm liquid-based foods, such as acorn gruel and pine nut meal. Whole acorns were stored in granaries, and pine nuts were stored in large pine bough-covered caches (Wilson and Towne 1978).

Ethnographically, Nisenan used baskets for a variety of tasks, including storage, cooking, traps, cradles, hats, cages, serving and processing foods, seed beaters, and winnowing trays. Basket manufacturing techniques included both twining and coiling, and baskets were decorated with a variety of materials and designs. Other woven artifacts include material made of tule, milkweed, sage fibers, or wild hemp (Wilson and Towne 1978).

Traditional basket making and other weaving technologies are still practiced by members of the Shingle Springs Rancheria and serve as a connection with traditional lifeways, as well as a means of outreach to the public to teach tribal connections to the land. For example, Nisenan weavers participate in public basket weaving demonstrations to teach the cultural significance of baskets and the importance of environmental reciprocity.

ECOLOGY AND PEOPLE

The local ecology of the Sacramento region is inextricably linked with the Nisenan people. Today, tribal artisans and culture bearers maintain the old ways through the practice of traditional ecological knowledge. The first European explorers and American trappers entering the Sacramento Valley described the landscape as one providing nourishment through mild gathering and easy hunting with “game aplenty” (Cronise 1868), and the availability of resources influenced the location of Nisenan permanent villages, since they acquired a proportion of their food resources from the surrounding general area (Littlejohn 1928; Wilson and Towne 1978). Juan Jose Warner, who traveled through the San Joaquin Valley during the winter of 1832-33 noted, “The banks of the Sacramento and San Joaquin, and the numerous tributaries of these rivers, and the Tule Lake [probably Tulare Lake], were at this time studded with Indian villages…the population of this extensive valley was so great that it caused surprise, and required a close investigation into the nature of a country that without cultivation, could afford the means of subsistence to so great a community.”

In actuality, the productive and diverse landscape were the outcome of sophisticated and complex harvesting and management practices by tribes (Anderson 2005). As today, the Nisenan protected and tended favored plant species and habitats, harvested plant and animal products at carefully calculated frequencies and intensities, and practiced an array of horticultural techniques. Through coppicing, pruning, harrowing, sowing, weeding, burning, digging, thinning, and selective harvesting, they influenced desired characteristics increased populations of useful plants, and altered the structures and compositions of plant communities (Anderson 2005).

Nisenan groups managed many wild plants, primarily by controlled burning which removed underbrush and encouraged growth of edible grasses, seed-producing plants, and other useful plant resources (e.g., basketry materials) (Blackburn and Anderson 1993). The use of fire for environmental modification and as an aid in hunting is frequently mentioned in the ethnographic literature relating to the Nisenan. Littlejohn (1928) noted that the lower foothills in the valley oak zone were thickly covered with herbaceous vegetation that was annually burned by the Nisenan to remove and limit its growth while facilitating the growth of oaks for harvesting acorns. The annual fires destroyed seedlings but did not harm established oak trees. Beals (1933) also noted that the Nisenan regularly burned the land, primarily for the purpose of driving game, and consequently created much more open stands of timber than currently exist in the area. Beals (1933:363) informants stated that before their traditional burning regimes were halted by European-Americans, "it was often a mile or more between trees on the ridges.” In addition to removing underbrush, improving travel conditions, and facilitating plant growth, burning may also have improved areas of deer forage, potentially altering migratory patterns of

deer populations by lessening their need to seek fresh forage on a seasonal basis (Matson 1972). The loss of cultural burning during the 19th and 20th centuries is now widely recognized as one of the causal factors for more recent devastating wildfires throughout California, and government agencies have begun calling on tribes to help prevent wildfires by bringing back this traditional cultural practice.

Communally organized Nisenan task groups exploited a wide variety of resources. Ethnographically, communal hunting drives were undertaken to obtain deer, quail, rabbits, and grasshoppers. Bears were hunted in the winter when their hides were at their best condition. Runs of salmon in the spring and fall provided a regular supply of fish, while other fish such as suckers, pike, whitefish, and trout were obtained with snares, fish traps, or with various fish poisons such as soaproot and wild cucumber (Beals 1933; Faye 1923; Starkey 2014; Wilson and Towne 1978). Birds were caught with nooses or large nets and were also occasionally shot with bow and arrow. Game was prepared by roasting, baking, or drying. In addition, salt was obtained from a spring near modern-day Rocklin (Wilson and Towne 1978).

Acorns were gathered in the fall and stored in granaries for use during the rest of the year. Although acorns were the staple of the Nisenan diet, they also harvested roots like wild onion and Indian potato, which were eaten raw, steamed, baked, or dried and processed into flour cakes to be stored for winter use (Wilson and Towne 1978). Buckeye, pine nuts, hazelnuts, and other edible nuts further supplemented the diet. Key resources such as acorns, salmon, and deer were spiritually managed through ceremonies to facilitate successful exploitation and equitable distribution (Beals 1933; Swezey 1975; Swezey and Heizer 1977).

Trade was important, with goods traveling between the coast and valleys into the Sierra Nevada, and beyond to the east. Coastal items like shell beads, salmon, salt, and Foothill pine nuts were traded for resources from the mountains and farther inland, such as bows and arrows, deer skins, and sugar pine nuts. In addition, obsidian was imported from the north (Wilson and Towne 1978).

For the Nisenan, and other local tribal groups, nature is considered fully alive and sensate: every rock, hill, valley, wind, plant, and animal is inhabited by spirit forces. Ethnographically, many cultural rules existed to keep humans from offending these spirits, who might otherwise react emotionally and cause lightning, thunder, whirlwinds, or earthquakes. Taboos were rigidly observed concerning diet and the physical body (Anderson 2005). While gathering or hunting, a belief centric to Indigenous Californians is to: (1) leave some of what is gathered for the other animals and (2) do not waste what you have harvested. Some acorns were always left on oak trees, some berries on bushes, and some tubers in the ground for “the birds and squirrels and other animals,” attested Marie Potts, a Maidu elder (Anderson 2005).

The spiritual practices that surround the act of harvesting, hunting, or fishing are as important as the act itself. How one approaches a plant or animal—with what frame of mind and heart—is very significant. A personal connection was often made by saying a silent prayer, leaving an offering, and thanking the plant or animal for the gift of its life

(Anderson 2005). Straying from this common practice is understood to result in the diminishment of plant and animal numbers. A prominent Pomo basket weaver explained this personal connection to place and to the plants:

> "When you come to dig these basket roots, you don't rush there and run all over, you don't do that. My mother always approached this grass very slowly. She'd come and stand and say a prayer. She also had a cane, and she'd touch this grass with it very slowly. She didn't go in there and just start digging. She'd come to a certain bed and try it; then she'd go on to another one and try there. Before she ever sat down, she'd do these three or four times. Then she'd sit down. She always asked the Spirit to give her plenty of roots. Then she'd says, "Thank you, Father," before she dug. And after she'd finished and had got what she wanted, she said a prayer, which is like saying, "That's good, you gave me enough. Amen, Father." (Anderson 2005).

As described above, a wide variety of ecological resources are important to Nisenan traditional lifeways. Table TCR-1, below, presents a list of resources that were and are harvested by Nisenan people, and their traditional uses.

Table TCR-1: Traditional Natural Resources Utilized in Central Valley, California

Common Name	**Type**	***Scientific Name***	**Used For**
Bear Grass or White Grass	Herbaceous Plants	*Xerophyllum tenax*	Baskets
Brodiaeas	Herbaceous Plants	*Brodiaea; Dichelostemma; Triteleia*	Food
Canary Grasses	Herbaceous Plants	*Phalaris* sp.	Food
Cattails	Herbaceous Plants	*Typha* sp.	Unspecified
Clarkias or Farewell-to-Spring	Herbaceous Plants	*Clarkia* sp.	Food
Clovers	Herbaceous Plants	*Trifolium* sp.	Food, Regalia
Dandelions	Herbaceous Plants	*Taraxacum* sp.	Medicine
Dogbane or Indian Hemp	Herbaceous Plants	*Apocynum cannabinum*	Cordage
Goosefoot	Herbaceous Plants	*Chenopodium* sp.	Food
Ithuriel's Spear or Grass-Nut	Herbaceous Plants	*Triteleia laxa*	Food
Mariposa Lillies	Herbaceous Plants	*Calochortus* sp.	Food
Milkweeds	Herbaceous Plants	*Asclepias* sp.	Cordage, Medicine, Food
Miner's Lettuce	Herbaceous Plants	*Claytonia perfoliata*	Food
Monkeyflower	Herbaceous Plants	*Mimulis guttatus*	Food, Medicine
Native Barley	Herbaceous Plants	*Hordeum intercedens*	Food
Nightshades	Herbaceous Plants	*Solanum* sp.	Food, Medicine
Red Maids	Herbaceous Plants	*Calandrinia cillata*	Food

Common Name	Type	*Scientific Name*	Used For
Sedges	Herbaceous Plants	*Carex* sp.	Food
Soap Plant	Herbaceous Plants	*Chlorogalum pomeridianum*	Medicine, Food, Poison, Soap
Tarweeds	Herbaceous Plants	*Madia, Hemizonia, and Blepharizonia* sp.	Food, Building Material
Toloache or Jimson Weed	Herbaceous Plants	*Datura wrightii*	Medicine, intoxicant
Tules or Bulrushes	Herbaceous Plants	*Schoenoplectus* sp.	Building Material, Basketry, Clothing, Regalia, Boats, Food
Turkey Mullein	Herbaceous Plants	*Ermocarpus setigerus*	Poison
Wild Oats	Herbaceous Plants	*Avena* sp.	Food
Wild Onions	Herbaceous Plants	*Allium* sp.	Food
Wild Strawberries	Herbaceous Plants	*Fragaria* sp.	Food
Wild Sunflowers	Herbaceous Plants	*Helianthus* sp.	Food
Wild Tobaccos	Herbaceous Plants	*Nicotiana* sp.	Intoxicant, Medicine
California Maiden-Hair Fern	Mosses and Ferns	*Adlantum jordanii*	Basketry
Big-leaf Maple	Trees and Shrubs	*Acer macrophyllus*	Building Material, Clothing, Food Preservation
Black Oak	Trees and Shrubs	*Quercus kelloggii*	Food, Building Material, Fuel, Tools, Weapons
Blue Oak	Trees and Shrubs	*Quercus douglasii*	Food, Building Material, Fuel, Tools, Weapons
California Bay or Laurel	Trees and Shrubs	*Umbellularia californica*	Medicine, Weapons
California Blackberry	Trees and Shrubs	*Rubus ursinus*	Food
California Buckeye	Trees and Shrubs	*Aesculus californica*	Food, Tools
California Hazel	Trees and Shrubs	*Corylus cornuta*	Food, Basketry, Weapons
California Wild Grape	Trees and Shrubs	*Vitis californica*	Food, cordage, cooking
Canyon Live Oak	Trees and Shrubs	*Quercus chrysolepis*	Food, Building Material, Fuel, Tools, Weapons
Currants and Gooseberries	Trees and Shrubs	*Ribes* sp.	Food
Elderberries	Trees and Shrubs	*Sambucus* sp.	Food, Musical Instruments, Tobacco Pipes
Foothill Pine or Gray Pine	Trees and Shrubs	*Pinus sabiniana*	Food, Fuel, Building Material, Basketry, Medicine
Incense-Cedar	Trees and Shrubs	*Calocedrus decurrens*	Building Material, Boats, Pigment, Flavoring
Interior Live Oak	Trees and Shrubs	*Quercus wislizenii*	Food, Building Material, Fuel, Tools, Weapons
Manzanitas	Trees and Shrubs	*Arctostaphylos* sp.	Medicinal Food, Fuel, Tools
Mountain Dogwood	Trees and Shrubs	*Cornus nuttallii*	Medicine
Oregon Oak	Trees and Shrubs	*Quercus garryana*	Food, Building Material, Fuel, Tools, Weapons

Common Name	Type	*Scientific Name*	Used For
Ponderosa Pine	Trees and Shrubs	*Pinus ponderosa*	Food, Building Material, Fuel, Basketry
Skunkbush	Trees and Shrubs	*Rhus trilobata*	Medicine
Sugar Pine	Trees and Shrubs	*Pinus lambertiana*	Food, Building Material
Toyon	Trees and Shrubs	*Heteromeles arbutifolia*	Food
Valley Oak or White Oak	Trees and Shrubs	*Quercus lobate*	Food, Building Material, Fuel, Tools, Weapons
Western Redbud	Trees and Shrubs	*Cercis occidentalis*	Basketry
White Fir	Trees and Shrubs	*Abies concolor*	Poison
Willows	Trees and Shrubs	*Salix* sp.	Basketry, Cordage, Building Material, Fuel, Clothing, Weapons
Wormwoods or Mugworts	Trees and Shrubs	*Artemisia* sp.	Medicine
Yerba Santa or Mountain Balm	Trees and Shrubs	*Eriodictyon californicum*	Medicine
Turtles	Amphibians and Reptiles	*Testudines*	Food
Western Rattlesnake	Amphibians and Reptiles	*Crotalus viridis*	Poison
Chinook or King Salmon	Anadromous Fishes	*Oncorynchus tshawytscha*	Food
Pacific Lamprey	Anadromous Fishes	*Lampetra tridentate*	Food
Rainbow Trout	Anadromous Fishes	*Oncorynchus mykiss*	Food
Sturgeons	Anadromous Fishes	*Acipenser* sp.	Food
Crayfish	Crustaceans/Water Invertebrates	*Astacidae* sp.	Food
Hardhead	Freshwater Fishes	*Mylophardon conocephalus*	Food
Sacramento Perch	Freshwater Fishes	*Archoplites interruptus*	Food
Sacramento Splittail	Freshwater Fishes	*Pogonichthys macrolepidotus*	Food
Sacramento Sucker	Freshwater Fishes	*Catostomus occidentalis*	Food
Steelhead	Freshwater Fishes	*Onocorynchus irideus*	Food
Thicktail Chub	Freshwater Fishes	*Gila crassicauda*	Food
Angleworms or Earthworms	Insects/Terrestrial Invertebrates	*Lumbricus* sp.	Food
Ants	Insects/Terrestrial Invertebrates	*Formicae* sp.	Food
California Gall Wasp	Insects/Terrestrial Invertebrates	*Andricus quercuscalifornicus*	Medicine

Common Name	Type	*Scientific Name*	Used For
Caterpillars	Insects/Terrestrial Invertebrates	*Lepidoptera*	Food
Ceanothus Silk Moth and Polyphemus Moth	Insects/Terrestrial Invertebrates	*Hyalophora euryalus and Antheraea Polyphemus*	Musical Instruments
Grasshoppers	Insects/Terrestrial Invertebrates	*Caelifera* sp.	Food
Honeybee	Insects/Terrestrial Invertebrates	*Apis mellifera*	Food
Horsefly	Insects/Terrestrial Invertebrates	*Tabanidae* sp.	Food
Salmon Fly	Insects/Terrestrial Invertebrates	*Plecoptera* sp.	Food
Yellowjacket Larvae	Insects/Terrestrial Invertebrates	*Vespula dolichovespula*	Food
American Coot	Marine Birds	*Fulica Americana*	Food, Blankets
Ducks	Marine Birds	*Anatidae* sp.	Food, Basketry
Geese	Marine Birds	*Anatidae* sp.	Food
Grebes	Marine Birds	*Podicipedidae* sp.	Food
Loons	Marine Birds	*Gaviidae* sp.	Food
Rails	Marine Birds	*Rallidae* sp.	Food, Blankets
Freshwater Clams	Shellfish	*Sphaeriidae*	Food, Regalia
Freshwater Pearl Mussel and Western Ridged Mussel	Shellfish	*Margaritifera margaraitifera and Gonidea angulate*	Food, Tools, Time
Band-Tailed Pigeon and Mourning Dove	Terrestrial Birds	*Patagionenas fasciata and Zanaida macroura*	Food, Weapons
California Quail	Terrestrial Birds	*Callipepla californica*	Food, Basketry, Regalia
Crows and Ravens	Terrestrial Birds	*Corvidae* sp.	Regalia
Dusky Grouse	Terrestrial Birds	*Dendragapus obscurus*	Weapons, Musical Instruments, Clothing
Falcons	Terrestrial Birds	*Falconidae* sp.	Regalia
Golden Eagle	Terrestrial Birds	*Aquila chrysaetos*	Regalia, Musical Instruments
Greater Roadrunner	Terrestrial Birds	*Geococcyx californianus*	Food, Regalia, Weapons
Hawks	Terrestrial Birds	*Accipitridae* sp.	Regalia, Weapons, Fans
Jays	Terrestrial Birds	*Corvidae* sp.	Food, Regalia
Owls	Terrestrial Birds	*Tytonidae and Strigidae* sp.	Regalia
Woodpeckers	Terrestrial Birds	*Picidae* sp.	Food, Regalia
Yellow-Billed Magpie	Terrestrial Birds	*Pica nuttallii*	Regalia

Common Name	Type	*Scientific Name*	Used For
Bears	Terrestrial Mammals	*Ursus* sp.	Food, Clothing, Blankets, Regalia
Black-tailed Deer or Mule Deer	Terrestrial Mammals	*Odocoileus hemionus columbianus*	Food, Weapons, Tools, Musical Instruments, Leather, Clothing, Blankets, Sinew
Chipmunks	Terrestrial Mammals	*Tamias amoenus and minimus*	Food
Foxes	Terrestrial Mammals	*Vulpes and Urocyon* sp.	Food, Leather
Gophers	Terrestrial Mammals	*Geomyidae* sp.	Food
Hares and Rabbits	Terrestrial Mammals	*Leporidae* sp.	Food, Regalia, Blankets, Clothing
Pronghorn	Terrestrial Mammals	*Antilocapra Americana*	Food, Clothing, Blankets, Leather, Containers (Horn)
Squirrels	Terrestrial Mammals	*Sciuridae* sp.	Food
Tule Elk	Terrestrial Mammals	*Cervus elaphus nannodes*	Food, Armor
Woodrats	Terrestrial Mammals	*Neotoma* sp.	Food
Basalt	Rocks and Minerals	*Basalt*	Tools, Weapons
Chert	Rocks and Minerals	*Chert*	Tools
Clay	Rocks and Minerals	*Clay*	Food Additive, Pigment, Pottery
Hematite	Rocks and Minerals	*Hematite*	Pigment
Magnesite	Rocks and Minerals	*Magnesite*	Currency
Obsidian	Rocks and Minerals	*Obsidian*	Tools, Weapons
Salt	Rocks and Minerals	*Sodium chloride*	Unspecified
Soapstone	Rocks and Minerals	*Steatite*	Tools, Utensils, Weapons

Source: NAHC Digital Atlas

Oral Traditions

Oral histories, explanatory stories, and cautionary tales were, and continue to be, integral aspects of native Californian culture. Stephen Powers, an anthropologist, once wrote:

> "The boundaries of all tribes…are marked with the greatest precision, being defined by certain creeks, canyons, boulders, conspicuous trees, springs, etc., each of which has its own individual name. Accordingly, [they] teach these things to their children in a kind of sing song…Over and over, time and again, they rehearse all these boulders, etc., describing each minutely and by name, with its surroundings. Then, when the children are old enough, they take them around…and so faithful has been their instruction, that [the children] generally

> recognize the objects from the descriptions given them previously by their mothers." (Anderson 2005).

Nisenan groups had a holistic epistemology; a theorem of holistic knowledge in which any subject is a composite of all other subjects, and every aspect of knowledge is interconnected. The Nisenan world contains many ineffable supernatural beings and spirits, and all natural objects are endowed with potential supernatural powers (Beals 1933).

Regional and Project Site Accounts

As an area situated generally between the Cosumnes River to the south, the American River to the north, and the foothills to the east, the project site falls into a liminal space several miles between numerous ethnographic village locations, and near the border between numerous tribal groups. However, as described below, this area became increasingly important to tribal groups in the surrounding region, as their territories were further constrained and violence continued to be inflicted upon them in the latter half of the 19th century.

The project site and surrounding area comprises an area marginal to both the cultures of the Valley and Hill Nisenan groups, as well as the Plains Miwok located further downstream along the Cosumnes River, southwest of the project site. Indigenous lifeways in this area were drastically impacted by the Gold Rush. The revival of local traditions and knowledge is a continuous process which relies on the preservation of contemporary resources.

Tosewin Cultural Landscape

The outcome of tribal testimony and ethnographic studies have demonstrated that, unlike other areas of Sacramento Valley where traditional tribal boundaries were observed, the project site is encompassed within a "landscape of survivance" in which members of many local tribes retreated and lived together as their lands were occupied and forcefully taken during the Gold Rush era. The Tosewin region generally encompasses approximately 192,000 acres (300 square miles) in the Sacramento Valley and foothills. It generally spans north to creeks running parallel to Folsom Lake, east to the foothills surrounding Latrobe, south to the oak woodlands of Rancho Murieta, and west to the riversides of Deer Creek. As described above, the Gold Rush period in California history was the culmination of decades of depredations, both intentional and unintentional, that led to the destruction of traditional tribal lifeways. By 1800, Spanish missionaries began making forays into the lower reaches of the Cosumnes River—with a recorded baptism occurred in a Miwok village in vicinity of the project site in 1826— in search of Catholic converts and forced Indian labor, after decimation of the tribes immediately surrounding the coastal missions (Maniery 2017:29). In 1833, soon after the first baptism, a devastating epidemic (variably considered to be malaria, smallpox, cholera, or measles) wrought havoc on the Native American populations of Northern California and Oregon. It is estimated that the mortality rate from the 1833 epidemic was 75 percent, and that over 20,000 people died in the Central Valley (Cook 1955).

Upon this backdrop, John Sutter arrived in 1839 and established New Helvetia, after obtaining a large land grant from the Mexican government, at the confluence of the Sacramento and American rivers. To build his agricultural empire, Sutter depended on labor (often forced) from the local Miwok and Nisenan, but also resorted to violence and terror to establish control over his land grant. Bennyhoff (1977) reports that many of the named villages along the Cosumnes River, immediately south of the project site, were moved there after conflicts with Sutter in the mid-1840s.

As a result of these events, and as testified to by stories passed down in the Native American community, the Tosewin (spelled To-se-win in some ethnographies) area became a landscape of survivance, an area between and slightly removed from the major land grabs and violence in Sacramento County and along the American and Cosumnes rivers, away from the predations of the major American settlements, where a semblance of traditional lifeways could still be practiced.

The Nisenan village at Walltown, is one example of a habitation site that was established in the Tosewin Cultural Landscape during the period of major upheaval and struggle for cultural survival in the latter half of the 19th century. The historic mining community of Walltown, associated with Wall's Diggings, was established in the early 1850s as a series of loosely affiliated modest dwellings established in proximity to the scattered claims (Thompson and West 1880: 215). Because of its relative remoteness, Walltown developed into a regional trading center; however, the development did not last, and the town became quickly depopulated when the yields decreased in the surrounding claims, decreasing from 40 registered voters in 1865 to 14 voters by 1868 (Wilson 2006). At the same time, Chinese prospectors arrived to work the placer mine operations alongside their white counterparts until the early 1870s, when white miners began to abandon the area. The Chinese mining operation at Walltown was purportedly a "corporate effort" (Wilson 2006), suggesting that the Chinese were hired by white claimholders or a larger Chinese entity, with over 1,000 Chinese having been resettled in Walltown.

During this same time, the Walltown Indian Village was established near the mining camp, likely due to the employment of tribal members at the diggings, having relocated from an older village located along Carson Creek southwest of the solar development area (Payen 1961). This was also likely the birth village of one of the headmen of the Walltown Indian community, Rabbit George, who is buried near the proposed project site. A larger and older Nisenan village on Deer Creek was also abandoned in approximately 1872, again indicative of the social upheaval of this period (Payen 1961). The Walltown Indian Village was in existence until the 1880's, but the main body of the camp departed earlier. The inhabitants of Walltown and the village on Deer Creek are believed to have joined a Hill Nisenan group (and perhaps members of other tribes) at even more eastern villages along the peripheries of the Tosewin Cultural Landscape. Though disenfranchised from their ancestral lands, the project site is part of important wayfinding locations for 19th century refugees—including trails which connect critical ecological resources, spiritual locations, and safe places where tribelets could still meet and live. Tribal members from Shingle Springs, consulted for the project, indicate that Scott Road follows the route of another precontact foot path that was used to trek to and from the Cosumnes River to White Rock. Tribal members consulted for the project also indicate that the boundaries of

where the Walltown Nisenan lived includes the project site, where they hunted and collected acorns, conducted grasshopper drives, and other subsistence activities. The general area was also used for ancestral burial sites.

SACRED ORIGIN MYTHOS

In addition to being a landscape of survivance, with access to important resource areas, a corridor that connected tribes and villages from the American River, Cosumnes River, and foothills, and held important historical implications for the maintenance and continuation of traditional tribal ways, the Tosewin landscape—inclusive of project site—is also related to traditional sacred origin stories.

Although details of these stories and the specific associated locations on the landscape are sacred and necessarily protected information, some limited details are included here. Eastern Sacramento County, containing the project site, has a spiritual connection to Mount Diablo. Portions of the project site fall within the viewshed of Mount Diablo. The associated origin tale describes how the first people came into being on top of the mountain and lived immortal and without need for resources. Coyote led them away from the mountain and to the creeks below the American River. They bathed in the creek and became mortals and now had to learn to make baskets and harvest acorns, and the general area is where they first did this (Burril 1988).

PROJECT SITE NATIVE HERITAGE TREES

The proposed project requests the removal of 4,787 trees (of which 1,792 are heritage trees) from the solar development area. Although not unique to the Tosewin Cultural Landscape, native oak species are major contributors to local indigenous history and lifeways. They continue to play a significant role as a spiritual contributor to the landscape for Nisenan descendants today. On the significance of California Heritage Trees, the UAIC of the Auburn Rancheria provided Sacramento County with the following narrative to address the tree resources in 2023:

> The United Auburn Indian Community are a Tribe of Miwok and Maidu (Nisenan) people with deep spiritual, cultural, and physical ties to their land. Their world view does not make clear distinctions between the “natural” and “cultural” resources of a place, as one does not exist without the other.
>
> Heritage trees are typically over 100 years old and hold historical significance in addition to providing many benefits to communities and landscapes. These trees have born witness to history and human interactions and are thought to hold a collective memory that is remembered and passed down from generation to generation. These resources also provide continuity between the past, present, and future.
>
> Heritage trees are no longer common due to persistent and ongoing development in the Tribe’s traditional territory. These trees represent an important part of a

landscape and cultural heritage that were once a part of the Tribe's social, economic, and religious wellbeing.

For example, the Tribal values of large oak trees go beyond tangible attributes, such as acorn production. They also provide aesthetics to the landscape, are symbolic, and hold religious and historic values by retaining a sense of the cultural heritage that contributes to the character of the landscape.

Furthermore, it should be noted that heritage trees necessitate increased conservation priority because they often provide exponentially more cultural and biological value than the same proportion of non-heritage trees. For example, traditional land stewardship often used cultural fire to preserve and increase the prevalence of heritage oak trees because they provided more acorns and cultural materials, associated biodiversity, resilience to disturbance, and other benefits than younger trees. Certain trees were tended by multiple generations of Indigenous peoples and held deep familial ties for this reason.

Heritage trees are living archives of the environmental conditions they experienced. Documented within the trunks of these trees is the history and important stewardship legacy of Indigenous peoples. Indeed, heritage trees act simultaneously as archives, habitat, legacy bearers, gathering places for people and food, genetic repositories, ancestral touchstones, and more.

Heritage trees not only provide important ecological functions, but they also play an important role in UAIC's social and cultural identity. Unfortunately, these Tribal values are often not taken into consideration in planning and administration of conservation policies and management guidelines.

Bringing awareness of heritage trees as an integral part of Tribal identity and cultural heritage is essential when addressing the issue of their decline within the Tribe's area of traditional and cultural affiliation. Tribal values of heritage trees must be considered in all conservation plans, developments, landscape policies, or other related management tools. When Tribal values are included, conservation outcomes are enhanced through the increased protection of ecological, social, and cultural values.

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 or objects imbued with particular cultural significance. These examples are not intended to be exhaustive, but instead to illustrate the range of possible TCPs. The National Park Service (NPS) National Register Bulletin 38 defines a traditional cultural property as a district, site, building, structure, or object 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. 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). 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. Evaluation of TCPs requires two major steps: evaluation of the integrity of the resource as a TCP and its eligibility for listing on

the NRHP under the process for assessing significance of historic properties. The four NRHP criteria for assessing significance include properties:

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 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).

STATE

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires public agencies to consider the effects of their actions on historical resources, unique archaeological resources, and TCRs. Under Public Resources Code 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 Public Resources Code Section 21084.2, a "project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

TRIBAL CULTURAL RESOURCES

TCRs may or may not manifest as archaeological sites. In some cases, TCRs are viewsheds, plant gathering areas, or other sacred spaces or objects that are not readily identifiable to non-tribal members but that meet the statutory definition of a TCR in that it is a significant resource under Public Resources Code Section 5024.1. In many cases, TCRs also include an archaeological component, such as artifacts, features, and sites (with or without human remains). Public Resources Code Section 21074 states the following:

(a) "Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1 [see below]. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms to the criteria of subdivision (a).

Subdivision (c) of Section 5024.1 states that a resource is eligible for inclusion in the California Register of Historical Resources (i.e., "significant"), if it meets any of the following criteria:

(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 construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

Assembly Bill (AB) 52

AB 52 (effective July 1, 2015) added Public Resources Code Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to CEQA, relating to intergovernmental 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 the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation. Public Resources Code 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

Public Resources Code 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:

- **Policy 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.
- **Policy CO-152.** Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.
- **Policy 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.
- **Policy 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.

- **Policy CO-157.** Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.
- **Policy CO-159:** Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

SIGNIFICANCE CRITERIA AND METHODOLOGY

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 Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

    ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

METHODOLOGY

The analysis of tribal cultural resources provided in this section is based on tribal traditional knowledge obtained through intergovernmental consultation, a cultural resources records search through the California Historical Resources Information System NCIC and a SLF search through the Native American Heritage Commission (NAHC). In addition, Dudek Inc. reviewed available Sanborn Maps, historic aerials, and conducted an intensive pedestrian survey for the project site. The County also submitted notification and request to consult letters to all interested Native American individuals and

organizations on the County's AB 52 Notification List and conducted Native American consultation, as requested, pursuant to AB 52.

CEQA requires intergovernmental consultation to occur early in the CEQA process to allow tribal governments, public lead agencies, and project applicants to exchange information to inform the CEQA lead agency's identification of TCRs that may be impacted by the project, determine the significance of any potential adverse impacts to TCRs, and identify feasible avoidance and mitigation measures. The intergovernmental consultation process is intended to reduce the potential for delay and conflict in the environmental review process through a good faith negotiation on the part of all participants. AB 52 defines "consultation" as "the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement." (Public Resources Code Section 21080.3.1(b), citing Government Code Section 65352.4) "Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance." (Public Resources Code Section 21080.3.1(b), citing Government Code Section 65352.4.)

As described above and in the technical report prepared for archaeological resources (Appendix CR-1), archival research, intergovernmental consultation pursuant to AB 52, and fieldwork were conducted to establish what TCRs may be present within the project site and, furthermore, may be impacted as a result of the implementation of the proposed project. The identification of and impact analysis for TCRs is based on the consultation between the County and culturally affiliated tribes, and the findings and recommendations of the Archaeological Resources Inventory Report (ECORP 2024) which includes eligibility evaluations of identified resources. In addition to the archaeological field surveys, at the request of tribal representatives, canine forensics surveys were undertaken by the Institute for Canine Forensics (ICF) to evaluate the definitive boundaries of the known occupation sites and to identify the location of potential human remains.

The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources. Pursuant to requirements set forth by AB 52, the County Planning and Environmental Review Department sent letters to all registered interested parties on December 23, 2021. The County received requests to consult from UAIC, Wilton Rancheria, Ione Band of Miwok Indians, and Shingle Springs Band of Miwok Indians. It is uncommon for a project to concern all four of the County's AB 53 consulting tribes. Tribal consultation for this project was conducted in good faith and with thorough communication efforts spanning three years of correspondence, meetings, site visits, and direct partnerships with tribal representatives. The County Planning and Environmental Review formally closed tribal consultation with UAIC, Wilton Rancheria, Ione Band of Miwok Indians, and Shingle Springs Band of Miwok Indians on January 13th, 2025.

Public Resources Code section 21074(b) provides that, "[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." To determine if the project site contains a Tribal Cultural Landscape (TCL), the County met with tribal elders and representatives, who were willing to share some of the aspects of landscapes within Sacramento County which contribute to contemporary spiritual practices and the overall preservation of indigenous lifeways. The applicant's consultant also engaged with tribes to collect ethnographic data in order to clarify the significance of TCRs throughout the project site. Particularly, the County requested that the ethnographer meet with tribal experts for more information regarding Tosewin, a landscape that was described during tribal consultation as existing within the project site. Sacramento County Planning and Environmental Review staff used the resulting ethnographic data to approximate the boundaries of Tosewin and to generate a quantitative impact analysis for the proposed project. In relation to the creation story described above, the applicant's consultant performed a viewshed analysis to compare tribal elder testimony to current site conditions and verify that Mount Diablo is visible from the project site.

RESULTS

Archaeological investigations by Dudek and consultation between the County and culturally affiliated tribes resulted in the identification of TCRs as defined in CEQA (Public Resources Code Section 21074) and other historical resources that may be subject to tribal consultation under CEQA. As summarized in Dudek's Archaeological Resource Inventory Report (Confidential, Dudek 2023) and in Chapter 8 of this EIR, 14 precontact or multicomponent archaeological sites (eight previously recorded and identified through the records search, and six identified through pedestrian field survey for this project) were identified within the project site. UAIC noted riparian corridors as having special significance during consultation between the County, applicant, and Tribes. Due to the Tribe's stated interest in resources along these riparian corridors, the County is treating all 14 sites as TCRs for the purposes of CEQA. In addition to the archaeological TCR's, the project site has been identified as existing within a larger cultural landscape, identified by tribal consultants as the "Tosewin District." The Tosewin District is a TCL related to a "landscape of survivance" for multiple tribal groups during the historic-era, with associations to sacred burial locations, traditional origin stories and associated sacred viewsheds, and traditional resource gathering areas. As described above in the "Environmental Setting" Section, the Tosewin region generally encompasses approximately 192,000 acres (300 square miles) in the Sacramento Valley and foothills, and spans north to creeks running parallel to Folsom Lake, east to the foothills surrounding Latrobe, south to the oak woodlands of Rancho Murieta, and west to the riversides of Deer Creek.

California Health and Safety Code section 8012(p) states: "'Tribal traditional knowledge' means knowledge systems embedded and often safeguarded in the traditional culture of California Indian tribes and lineal descendants, including, but not limited to, knowledge about ancestral territories, cultural affiliation, traditional cultural properties and landscapes, culturescapes, traditional ceremonial and funerary practices, lifeways,

customs and traditions, climate, material culture, and subsistence. Tribal traditional knowledge is expert opinion."

According to the Governor's Office of Planning and Research, "Evidence that may support … a [significant] finding could include elder testimony, oral history, tribal government archival information, testimony of a qualified archaeologist certified by the relevant tribe, testimony of an expert certified by the tribal government, official tribal government declarations or resolutions, formal statements from a certified Tribal Historic Preservation Officer, or historical/anthropological records" (OPR Technical Advisory, AB 52 and Tribal Cultural Resources in CEQA, 2017, p.5.). Many of these sources of information have come to bear in the definition of the Tosewin TCL. Pursuant to section 8012(p), the County considers the information provided by Tribes throughout consultation and during the ethnographic data collection period to be crucial evidence which supports the existence of a TCL that meets the CRHR eligibility criterion.

EVALUATION OF THE TOSEWIN TRIBAL CULTURAL LANDSCAPE

Not all significant events require demonstrable, tangible evidence. Federal law provides examples of potential sources of tribal knowledge in which a landscape is significant through origin myth and allegorical tales that are spiritually and culturally significant to the contemporary tribal members. The federal Native American Graves Protection and Repatriation Act recognizes the following types of evidence of cultural affiliation: geographical, kinship, biological, archaeological, anthropological, linguistic, folklore, oral tradition, historical, or other relevant information or expert opinion. (43 C.F.R. Section 10.14(d)).

The Tosewin TCL, is directly associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage (CRHR Criterion 1). Specifically, the landscape was vital in the maintenance of traditional tribal lifeways during a period of major upheaval for the Sacramento Valley and foothills indigenous population and is also important in ethnic heritage and sacred origin stories. Contributing elements of the Tosewin TCL include habitation sites, resource collection and processing sites, burial sites, travel routes/paths, specific locations (e.g., Coyote Creek) related to sacred origin stories, viewsheds related to these stories (e.g., viewshed of Mount Diablo), as well as animal and plant communities (including native oak woodlands and "heritage trees") that are considered sacred and necessary for passing down indigenous traditions and customs. The Tosewin TCL is also directly associated with the lives of individuals who made an important contribution to the past (CRHR Criterion 2). Specifically, Coyote Spirit (an important spiritual figure prominent in various festivals and ceremonies) is associated with locations across the landscape. As described in the revised National Register Bulletin 38 (which is specifically developed to assist with evaluation under the National Historic Preservation Act but is a credible and relevant source of guidance in the County's consideration of the Tosewin TCL) "'persons' can refer to a physical human being whose existence in the past can be documented from historical, ethnographic, or other research, as well as an ancestor or spirit who features in the traditions of a group. Criterion B [equivalent to CRHR Criterion 2, in this case] is intended to be applied to a place associated with a *specific* person—or ancestor or spirit—

not a general group like 'the ancestors'." (NPS 2013:60). Finally, the Tosewin TCL appears significant for its potential to yield information important to the history and prehistory of California (Criterion 4). Aside from the archaeological sites identified within the Tosewin District—including the 14 identified within the project site (but excluded from the solar development area; see discussion below)— which are assumed eligible as historical resources with the potential to yield important archaeological data (see Chapter 8, "Cultural and Paleontological Resources"), as well as being eligible as TCRs, other as-yet undefined portions of Tosewin have the potential to yield important information through ethnographic, archeological, sociological, folkloric, or other studies. Through ongoing tribal interaction with the landscape, the Tosewin TCL has the potential to continue to provide important ethnographic and historic information about the integral relationship between the landscape and the tribes.

Large portions of the Tosewin TCL do not retain sufficient integrity. Large swaths of the TCL, primarily along the American River corridor, have been altered through modern development (e.g., the communities of Carmichael, Rancho Cordova, etc.) impacting many of the traditional contributing elements described above. Despite this, the southern and eastern portions of the TCL, including the current project site, remain relatively undeveloped (other than disparate agricultural and historic mining areas) and retain sufficient integrity of location, setting, feeling, and association, to convey the historic sense of place of this natural landscape.

The CRHR and the NRHP require definition of the "period of significance" for an eligible resource (i.e., the time period during which the resource is associated with significant events or attained significance). As stated in the revised draft National Register Bulletin 38, "Since significance to a living community in the present is a key characteristic of a… TCP, the period of significance of a TCP must extend to the present and may continue into the future. However, determining the 'starting point' of a period of significance for a TCP may be challenging" (NPS 2023:109). Numerous examples are given in Bulletin 38 of TCP associated with sacred origin stories and the perpetuation of cultural traditions "where no specific starting date is readily identified, the recommended phrase for nomination is 'time immemorial to the present'" (NPS 2023:113). Although the Tosewin TCL is directly related to the landscape of survivance, sites like Walltown, and individuals like Rabbit George, all of which gained significance during the historic-era, associations with sacred locations and viewsheds (like the Coyote and Mount Diablo origin stories) and the importance of the region to living descendants, suggest that the period of significance for Tosewin is indeed time immemorial to the present.

IMPACTS AND ANALYSIS

IMPACT TCR-1: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE

Numerous sites, both NRHP-listed and eligible have been recorded within the project site or within a half-mile radius. There are also numerous reports supporting the likelihood that Nisenan traversed the area and benefitted from TCRs that once flourished.

As described in Chapter 8, "Cultural and Paleontological Resources," all precontact indigenous archaeological resources identified through background research and field inventory have been excluded from the solar development area through project design. Traditionally culturally affiliated Native American tribes have been contacted by the County to provide input on precontact indigenous resources in close proximity to the solar development area, particularly P-34-000250 and P-34-000253. Site visits were also completed with tribal representatives in these areas (as described in Chapter 8, "Cultural and Paleontological Resources"). The applicant will be required to avoid and preserve in place all recorded precontact indigenous archaeological sites (also considered TCRs), consisting of 14 sites in total, through mitigation required as a part of this EIR. These 14 resources are assumed to be NRHP/CRHR eligible. Given the presence of significant precontact archaeological resources, geomorphic and topographic conditions suited for some areas to contain buried features and/or deposits, and the conditions during fieldwork (variable ground surface visibility during survey), it is possible that additional unrecorded TCRs could be present. Archaeological TCRs may be buried and exposed during project construction and decommissioning activities. Buried archaeological remains may be determined eligible for listing in the CRHR as TCRs, as would Native American human remains. Impacts to such resources, left unmitigated, would have potential to result in a significant impact.

As described in Chapter 8, "Cultural and Paleontological Resources," the implementation of Mitigation Measures CR-2a (Cultural Resource Management Plan), CR-2b Construction Monitoring), and CR-3a (Walltown Mining District Historic Study and Interpretive Plan) would generally reduce the potential impacts to any unknown archaeological sites or buried human remains that could be determined to be TCRs. Among other requirements, Mitigation Measure CR-2a (Construction Monitoring) provides for the establishment and maintenance of environmentally sensitive areas (ESA) to avoid impacts to known resources adjacent to the solar development area, and the appropriate treatment of unanticipated discoveries made during the course of construction. Mitigation Measure CR-2b (Construction Monitoring) provides for archaeological and Native American monitoring during construction. Mitigation Measure CR-3a (Cultural Resource Management Plan) provides for the appropriate treatment of unanticipated discoveries of human remains, in accordance with applicable statutes. While these mitigation measures would reduce the potential for adverse impacts to any archaeological resources and ancestral Native American human remains during construction, the implementation of *TCR-1* (Tribal Cultural Resource Avoidance and Minimization Plan), defined below, would further address the impacts to TCRs.

In addition to the archaeological TCRs discussed in Chapter 8 “Cultural and Paleontological Resources”, the project site and solar development area have been determined to exist wholly within the Tosewin District which, through tribal consultation and ethnographic research, has been determined by the County to be significant and therefore eligible for listing in the CRHR as a TCL for purposes of CEQA. The significance of the TCL was previously known to the tribes, but the exact details of all of the existing contributing resources were not. As a result, as part of the consultation and background studies conducted in support of this EIR, the tribes asked for the following additional studies:

- Canine Forensic survey to delineate the boundaries of potential burials. Survey was conducted and the ESA buffers were adjusted to ensure avoidance of the site boundaries.
- Drone footage for the tribes to review and provide their own resource identifications. This was given to tribes, but no additional information was disclosed by the tribes to the County, as specific resource locations are often considered sacred tribal knowledge.
- Ethnographic study to be conducted and applied as a technical study. The ethnographic study has two phases—the technical data gathered through tribal elder testimony to define the general boundaries and significance of Tosewin, and the second phase, which is a deliverable to the tribe with the ethnographer’s full findings (see TCR-1 (Tribal Cultural Resource Avoidance and Minimization Plan), below).
- Treatment plan that is specific to TCRs and separate from the archaeological treatment plan created by applicant’s consultant (see MM-CR-2b [Construction Monitoring]).

The County has concluded that the impacts to the Tosewin TCL are significant based on the following evidence:

1. Tosewin is a vast landscape described by tribes in their ethnographic accounts as “a landscape of survivance”. It spans north to creeks running parallel to Folsom Lake, east to the foothills surrounding Latrobe, south to the oak woodlands of Rancho Murieta, and west to the riversides of Deer Creek. Thus, the entirety of the project site is subsumed within its approximated boundary. It is known to all the regional tribes as the place where traditional tribal boundaries were suspended and many individuals from different villages came to cohabitate as their traditional territories became increasingly encroached by the immigrants of the Gold Rush. The landscape, including Coyote Creek within the proposed solar development area, also has a direct connection to the Coyote Spirit.

Tosewin as a TCL is considered an altered landscape. There are numerous examples of altered sacred landscapes, including in Sacramento County. For example, the Sacramento River is a registered TCL. Coyote Creek and its surrounding woodland is a cultural place within the landscape that is particularly spiritual and retains a high degree of integrity. In other words, the fact that Tosewin is largely altered through urbanization is not an argument to invalidate the significance of the remaining undeveloped landscape. Where the ecological spiritualism of Tosewin is lost elsewhere, the remaining lands, including the project site, retain increased importance as examples of the landscape's character and contemporary tribal significance.

Despite being subject to agriculture and past mining activities, the project site itself provides an example of Tosewin oak woodlands whose viewshed is largely absent of urbanization. Sacramento County Planning and Environmental Review staff worked with consulting tribes to further identify the section of Tosewin where a spiritual quality relating to the history and character of Coyote Creek is present. Landscape with these characteristics include:

A. Undeveloped
B. Contains waterflows with mature oak woodland

The tribes relayed to the County the importance of walking among oak trees and seeing Mount Diablo as a spiritual interaction with a religious being (Coyote Spirit) as it is an ancient wayfinding tool. The viewshed of Tosewin between approximately Highway 50 (north boundary), the County line (east boundary), State Route 16 Jackson Highway (south boundary), and Sunrise Boulevard (west boundary) qualifies as a TCL as it meets three of the four CRHR criteria (1,2, and 4). The proposed project would impact portions of this viewshed in a spiritual sense. In addition, the existence of historic waterways (e.g., Coyote Creek and Carson Creek), culturally significant plant and animal species, as well as increasingly rare native oak woodlands are sacred and necessary for passing down indigenous traditions and customs. The proposed project would reduce the extent of these native habitats/resources within the solar development area, which would reduce the proliferation of these resources in a broader sense following construction of the project.

2. Burial Proximity and Orientation. Known burial locations in the project site vicinity, but outside of the proposed solar development area, are oriented with the intention to connect the deceased with the viewshed of Coyote Creek, the movement of the sun through the sky, and Mount Diablo. To the degree that the project would impact this geographical affiliation and disrupt the natural setting of these burials, as attested by consulting tribal representatives is a significant impact supported by

the National Register Bulletins “Guidelines for Identifying, Evaluating, and Documenting Traditional Cultural Places”. (NPS 2023).

The County has determined Tosewin to be a TCL. Based on the evidence gathered, the County has verified that the TCRs are unique and spiritually significant to the living descendants of its former inhabitants and would be significantly impacted by changes in the viewshed and the local ecology, including removal of heritage oak trees, which are associated with contemporary tribal spirituality and a contributor to the Tosewin TCL. Unlike archaeological historical resources and unique archaeological resources, which are typically eligible for their data potential (Criterion 4) and the impacts to which can be mitigated through archaeological excavations to recover and document that important information, the significance of TCRs, and the Tosewin TCL in particular, rests primarily in their importance to living tribal groups and the connection they provide to important historic events and traditional lifeways. The County has worked with the tribal community to develop the following mitigation measures, to minimize impacts to tribal cultural resources to the degree possible.

Mitigation Measures

TCR-1. Tribal Cultural Resource Avoidance and Minimization Plan.

In order to mitigate impacts to known TCRs and those resources that may inadvertently be encountered during construction-related activities, the applicant shall prepare a *Tribal Cultural* Resources *Avoidance and Minimization Plan* (TCR AMP). The TCR AMP shall be reviewed by the County and consulting tribes, and finalized and approved prior to construction. The TCR AMP shall, at a minimum, include specific guidelines and direction on the following components:

Pre-Construction Elements

Avoidance and Preservation in Place. The applicant shall demonstrate to the County’s satisfaction that the 14 identified indigenous archaeological sites, plus a minimum 100-foot buffer around them (Environmentally Sensitive Areas [ESAs]), will be fenced prior to construction and shall be avoided during project construction. No project activity can occur within an ESA without County approval and a tribal monitor present. Prior to issuance of a grading permit, the applicant and the landowner shall jointly propose to the County for review and approval a measure to avoid impacts within the ESAs throughout the life of the project, including ongoing management responsibility of the ESAs throughout the life of the project.

The ESA locations shall be noted on project construction and engineering plans as “Environmentally Sensitive Areas” and shall be fenced prior to commencement of construction activities (detailed below). In order to achieve preservation in place, it is important to confirm the boundaries of the ESAs in coordination with the consulting tribes and archaeologists.

- Pre-Designation of Reburial Area. The applicant shall pre-identify a reburial location in consultation with culturally affiliated tribes, to serve as a reburial location in the event that tribal cultural resources are identified during ground-disturbing activities associated with project construction. The location pre-selected shall be recorded with a GPS device capable of sub-meter accuracy and be under the control of the property owner and in an area not planned for future disturbance. A copy of a map showing the reburial location and GPS-recorded shapefiles shall be filed with the County for proof of compliance and shall remain confidential.

- Communication Protocols for Monitoring. The applicant shall develop a set of communication protocols, to the satisfaction of the County and tribes, to identify all points of contact and to ensure that tribes are notified when the applicant will proceed with authorized construction activities. Points of contact shall be established for the applicant, construction supervisor, monitoring tribes, project archaeologist, and County staff, and the cell phone numbers and email addresses must be documented and shared among all parties. Points of contact are responsible for identifying backup representatives in the event they are unable to perform due to an absence or other reasons.

Construction-Period Elements

Reburial Lab Facility. The applicant or prime contractor shall provide one standard office-style construction trailer that is to be used exclusively by tribal monitors. In the event that there is a discovery of tribal cultural resources during construction, this trailer will be converted into a lab space for tribal monitors to prepare the materials in a culturally appropriate manner prior to reburying them. The lab facility shall remain until all ground disturbing activities have been completed and any tribal cultural resources have been reburied.

Temporary Fencing. All ESAs shall be protected from incidental disturbances during construction activities by the placement of high visibility temporary exclusionary fencing. The fencing shall be installed under the direction of a tribal monitor and archaeological monitor (collectively, “Monitors”) and shall remain intact throughout project construction. The Monitors will be responsible for periodic checks of the fencing, and any deficiencies reported to the contractor must be remedied before resumption of ground disturbing activities within 100 feet of the repair site.

Worker Awareness Training. The County shall ensure that a worker awareness training program is developed in coordination with the Tribes and delivered to train the Contractor’s equipment operators and the project’s field consultants about tribal cultural resources and the requirements for avoidance and minimization. The County shall offer the opportunity to the consulting tribes to provide content for the training program. The training shall be given first to construction supervisors. The construction supervisors are responsible for ensuring that all workers that will operate ground-disturbing equipment receive this training prior to operating

equipment that will disturb original ground. All trained workers will be required to receive a brochure and hardhat sticker and sign a form indicating their understanding of the requirements and restrictions and copies of the forms shall be provided to the County as proof of compliance.

Tribal Monitoring. All construction-related ground-disturbing activity shall be monitored by a qualified tribal monitor from a consulting tribe on this project to ensure that the procedures for unanticipated discoveries are addressed expeditiously and in accordance with the plan. The requirements for a monitor should be inclusive of all day and night construction activity that has the potential to result in ground disturbance. “Ground-disturbing activity” is defined as any activities that have the potential to disturb soil beyond that which was reasonably visible to tribal monitors and archaeologists during the pre-project pedestrian survey. This includes, but is not limited to, ground disturbing activities such as: grading; trenching; excavation for below-ground utility installation or foundation work; and any other below the ground activities. An adequate number of tribal monitors must be present to sufficiently cover multiple locations of ground disturbing activities.

Tribal Monitors will have the authority to request a temporary and reasonable pause of ground-disturbing activities within 100 feet of a discovery of up to 30 minutes to safely and initially examine the ground more closely for indications of potential tribal cultural resources, without being impeded by construction equipment. In the event of the discovery of a potential tribal cultural resource, treatment plan protocol must be completed before resuming work at that location.

- Response to Unanticipated Discoveries of Tribal Cultural Resources. If potential tribal cultural resources are encountered at the project site during construction, work shall be temporarily suspended within 100 feet of the find (based on the apparent distribution of cultural materials), and the construction Contractor shall immediately notify the County. Within two business days of the County receiving notification of an unanticipated discovery of a tribal cultural resource outside of the ESA, the County, tribal monitors, and applicant shall perform a field visit to the location of the discovery and confer on the appropriate treatment of the resource. The applicant shall be afforded the opportunity to review the feasibility of avoidance and preservation in place. The County shall review available information and comments from the traditionally culturally affiliated tribes and determine if the resource meets the definition of a tribal cultural resource, as defined by Section 21074(a) of the Public Resources Code. If the County concludes on the basis of substantial evidence that the resource qualifies as a tribal cultural resource under Section 21074(a) of the Public Resources Code, the County shall require the project proponent to implement the following mitigation measure to comply with the standards in Public Resources Code section 21084.3 (1) preservation in place where feasible; (2) if preservation in place is not feasible, mitigation shall be undertaken pursuant to the TCR AMP. The County’s determination of the presence of a tribal cultural resource should not be unreasonably withheld. If

the discovery includes human remains, the procedures under Health and Safety Code Section 7050.5 or 7000 and, if applicable, Public Resources Code Section 5097.9 et seq. shall be carried out prior to any further action described below.

The Contractor shall take protective measures to install temporary high-visibility fencing around the limits of the stop-work radius until consultation and treatment is completed in accordance with this mitigation measure and the AMP. Fence installation must be monitored by a tribal representative and shall include a sign indicating an Environmentally Sensitive Area. The Contractor may also use plywood sheets or metal plates to cover the exposure, in consultation with the tribal representative, in the event that the discovery must remain protected during non-working hours. The Contractor is responsible for ensuring that the security measures that are taken to protect the entire construction site are extended to the location of the discovery as well.

Additional boundary delineation may be necessary to understand the horizontal and vertical extent of the discovery outside of the ESA area. Selection of the appropriate method will be made by the applicant, in consultation with the parties participating in the consultation process described in this Plan. Options may include ground penetrating radar (including ground truthing of identified anomalies), geoarchaeological trenching, shovel testing or auguring, and/or controlled mechanical grading.

Evaluation of the significance of identified tribal cultural resources is the responsibility of tribal monitors. Where such a resource includes archaeological components, the evaluation shall be a cooperative effort with the archaeologists, whereas the archaeologists will record and evaluate relative to NRHP/CRHR criteria, and tribal monitors evaluate relative to TCR criteria and provide their preferences on recovery, relocation, and/or repatriation.

The consulting tribes will be invited to provide recommendations on culturally appropriate treatment to the County and the applicant. Avoidance and preservation in place are the preferred manner of mitigating impacts to cultural resources and tribal cultural resources. Discoveries of cultural resources that are determined not to meet the definition of a tribal cultural resource but that are determined to be otherwise historic resources under Public Resources Code section 5024.1(c) will be subject to the cultural resources mitigation measures which are documented separately in the environmental document.

Post-Construction Elements

Repatriation of Tribal Cultural Resources. Reburial methods will ensure that reasonable measures have been taken to prevent future disturbance. This may include a reburial process that will use a series of layered soil or materials that serve to warn future excavators of the presence of repatriated materials, upon mutual agreement of the parties, and through consultation with the MLD, if one is

designated by the NAHC. Culturally affiliated tribes shall be afforded the opportunity to prepare collected materials in a culturally appropriate manner prior to reburial. Reburial can occur at any time but must be completed no later than 30 days after the conclusion of construction. If the reburial does not occur within 30 days of the completion of construction because tribal monitors require additional time to prepare the materials for reburial in a culturally appropriate way, the County may authorize operation of the project prior to reburial. Recognizing the importance of culturally appropriate preparation of materials for reburial, the applicant shall provide funding for tribal repatriation specialists to prepare the materials.

In addition, in the event human remains or cultural materials are reburied, in accordance with Section 5097.98(e) of the Public Resources Code, the location of the reburial shall be recorded on a Department of Parks and Recreation (DPR) 523-Series Primary Record and Location Map and submitted to the California Historical Resources Information Center [5097.98(e)(1)], NAHC, and a reinternment record filed with the County [5097.98(e)(3)], within 30 days of the reburial. Recording of the location of reburial is required by state law (5097.98(e)] and is critical to ensuring that the reburial site is not inadvertently disturbed in the future. The reburial location will be documented on a DPR 523 series form and filed with the CHRIS and California NAHC within 30 days, unless tribe choose to rebury on tribal-owned land.

- Restrictive Instrument for Preservation. The applicant recognizes that they hold a lease option over the entire project site, but the resulting project will impact a smaller footprint (the “solar development area”). It is anticipated that areas outside of the solar development area, including avoidance areas, of the project will not be leased by the applicant, and the land outside of the solar development area will generally be released to the landowner for their use. Thus, within six (6) months of the completion of construction of the project, the applicant shall exercise good faith, reasonable efforts to cause to be recorded, by the landowner, a restrictive instrument to the County or other entity agreed to by the County and landowner over the avoidance areas (and the reburial location, if used) (collectively, the “ESAs”) and restricting future uses of the avoidance areas consistent with the conservation of the applicable tribal cultural resource. Such restrictions shall not disclose the nature of the ESAs.

In the event that the landowner is unwilling to record a restrictive instrument over the ESAs, the applicant shall direct the project Archaeologist to fully record the boundaries of the ESAs with the California NAHC, CHRIS, and County. In addition, the applicant shall notify the landowner in writing, with copies to the Tribes, County, and SMUD, that these ESAs are recommended to be preserved in place in perpetuity; the applicant proposes to do so without additional consultation with said entities. The intent of these notifications is to help ensure that future unrelated project proponents are alerted to the presence of restricted areas.

- Monitoring Report. At the conclusion of monitoring activities, the project Archaeologist shall submit to the County a Monitoring Report for the project, which incorporates all previously unknown discoveries and presents the methods and results of all monitoring activities. The draft report shall be submitted to the County within 18 months of the completion of all project construction. Tribal monitors shall be invited to review or contribute to the report. For funerary objects and human remains, only sketches of materials shall be documented with DPR forms; no photography is permitted.

- Ethnography Deliverable Phase 2. The ethnography may be prepared in both confidential and public-facing versions, shall be subject to review by consulting tribes in draft form, and approved by the County prior to dissemination to appropriate repositories. The draft report shall be submitted to the County within 24 months of the completion of all project construction. The approval of the final report by the County will deem the implementation of the deliverables complete.

SIGNIFICANCE AFTER MITIGATION

Implementation of *TCR-1* would provide Native American tribes an opportunity to be involved in awareness training of construction personnel, notification of pending ground disturbing activities and opportunity to monitor such activity with the authority to stop work if warranted, as well as involvement in decisions regarding the identification, treatment, and disposition of TCRs. In addition, TCR-1 provides for the completion of an ethnographic study to document the intangible and culturally relevant elements of TCRs in the project site and surrounding Tosewin area. In combination with Mitigation Measures CR-2a, CR-2b, and CR-3a, the recommended mitigation measures would address the inadvertent discovery of TCRs, including cessation of construction activities proximate to the discovery and notification of the appropriate Tribal Representative(s). However, the project would result in the development of significant new infrastructure and visual impacts that would substantially alter the historical setting and feeling of contributing elements of the CRHR-eligible Tosewin TCL. Based on the evidence gathered, the County has verified that the TCRs in the vicinity of Coyote Creek are unique and spiritually significant to the living descendants of its former inhabitants and would be significantly impacted by changes in viewshed and the contemporary, spiritually associated ecology. The proposed solar development area will impact the remaining oak woodland associated with Coyote Creek, the Walltown Nisenan, and a portion of the remaining developed sections of the landscape itself. The mitigation measures shall ensure the proper treatment of TCRs but will not fully reduce the holistic impacts to the landscape and its contributing resources to below a level of significance. The County is unaware of other feasible measures that would fully mitigate for this impact. As a result, despite implementation of the recommended mitigation measures, the impact on TCRs would be **significant and unavoidable**.

15 WILDFIRE

INTRODUCTION

Appendix G of the CEQA Guidelines requires an analysis of wildfire if a proposed project is located in or near state responsibility areas (SRAs) or lands classified as very high fire hazard severity zones. As discussed below, the project site is within an SRA.

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 are within Battalion 1 of CAL FIRE's Amador-El Dorado Unit (CAL FIRE 2023). 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 1 of the Amador-El Dorado Unit consists of 587,545 acres and encompasses portions of Amador, El Dorado, and Sacramento counties. There are two CAL FIRE stations within the Battalion and two unstaffed fire lookouts. Camino Fire Station 20, located at 2840 Mount Danaher Road in Camino, staffs two Type 3 engines[1] year-round and one reserve Type 3 engine. Camino Fire Station 20 is also the location of the Unit Administrative Headquarters, the Unit Emergency Command Center, the Unit Expanded Dispatch Center, and the Regional Department of General Services Radio Technician Offices. El Dorado Station 43, located at 56660 Mother Loade Drive in Placerville, staffs two Type 3 engines and one Type 2 Fire Dozer. There are no CAL FIRE stations in Sacramento County; however, the response area for the Camino Fire Station 20 includes the American River Canyon/Highway 50 corridor and the El Dorado Fire Station 43 includes eastern Sacramento County (CAL FIRE 2023).

2022 FIRE SEASON IGNITION STATISTICS

The Amador-El Dorado Unit's Strategic Fire Plan provided a comprehensive summary of fire ignition statistics. In 2022, the Amador-El Dorado Unit experienced 214 wildland fire ignitions

[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, a large 500 gal/tank, 1,000 ft. 1 1/2″ hose, 800 ft. 1″, and minimum of four firefighters.

within its protection area resulting in approximately 4,830 acres burned. This was a decrease of 45 ignitions from 2021 (259 fires), and less than the 10-year annual average of 253 fires. There were 20 wildland fire ignitions in Sacramento County in 2022.

Most wildfires in the Amador-El Dorado Unit protection area have resulted from debris burning (34 percent). Other common fire causes within the Amador-El Dorado Unit protection area include equipment (13 percent), vehicle (9 percent), electrical fires (8 percent), and "other" fires (9 percent) (CAL FIRE 2023). Fourteen percent of fires had undetermined causes, and the remainder were caused by arson (8 percent), smoking (2 percent), campfires (1 percent), playing with fire (1 percent), one natural fire (less than 1 percent), and one fire is still under investigation (less than 1 percent). Two of the five largest fires in 2020 in the Amador-El Dorado Unit occurred in Sacramento County (CAL FIRE 2023):

- Grant Fire burned 73 acres of grass and ranchland in Sacramento County. The fire was caused by a subject attempting to burglarize the Boys Ranch Facility.
- Nelda Fire burned 28 acres in Sacramento County. The cause of this fire was undetermined.

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 four primary factors: topography, weather, fuels, and human influences. The following discussion briefly describes how each of these factors influences wildfire behavior within and in the vicinity of the planning site.

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 situated primarily within the gently rolling foothills at the western margin of the Sierra Nevada. The northwestern corner of the project site is situated at the eastern margin of the Sacramento Valley. Elevations range from 170 to 275 feet above mean sea level.

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] 2022). On average, the months with the highest rainfall are December and January, and July has the least precipitation (NOAA 2022).

The project site has average annual temperatures that range from approximately 37° to 95°F (NOAA 2022). According to data from NOAA, the total precipitation recorded from January 1, 2022, through December 31, 2022, at the Sacramento WB Station was 11.19 inches (NOAA 2022).

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 2022). In 2022, the average windspeed in Sacramento County was 5.8 miles per hour (NOAA 2022).

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 sheep and cattle grazing Valley and foothill grassland is the dominant vegetation community present within the project site followed by blue oak woodland. 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.

Human Influence

Human influence on wildfire is broad and can be substantial. It includes direct influences such as the ignition and suppression of fires, and indirect influence through climate change and alterations in land use patterns that support modified vegetative regimes. Anthropogenic influence more directly controls fire frequency than area burned because anthropogenic ignitions are responsible for a large number of ignitions, but once started, fire spread, and behavior become a function of fuel characteristics, terrain, and weather conditions. Areas where human influence is concentrated, but not so much so that the environment reflects an urban setting, greatly exacerbate the risk of wildfire due to the potential capacity for human-caused ignitions and fire spread (Balch et al. 2017).

Wildfire ignitions can be generated by either natural or human causes, the proportion of which depend on a variety of factors, including the presence of human activity and local climate and weather patterns. Human-induced wildfire ignitions have the ability change fire characteristics in two ways: (1) changing the distribution and density of ignitions, and (2) changing the seasonality of burning activity (Balch et al. 2017). A study of wildfires in California concluded that humans

account for starting approximately 95 percent of wildfires in the state (Isaacs-Thomas 2020). Circumstances in California have made the environment particularly vulnerable to human-caused fires with expansion of the wildland-urban interface and introduction of more people in areas susceptible to wildfire at all times of the year.

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.

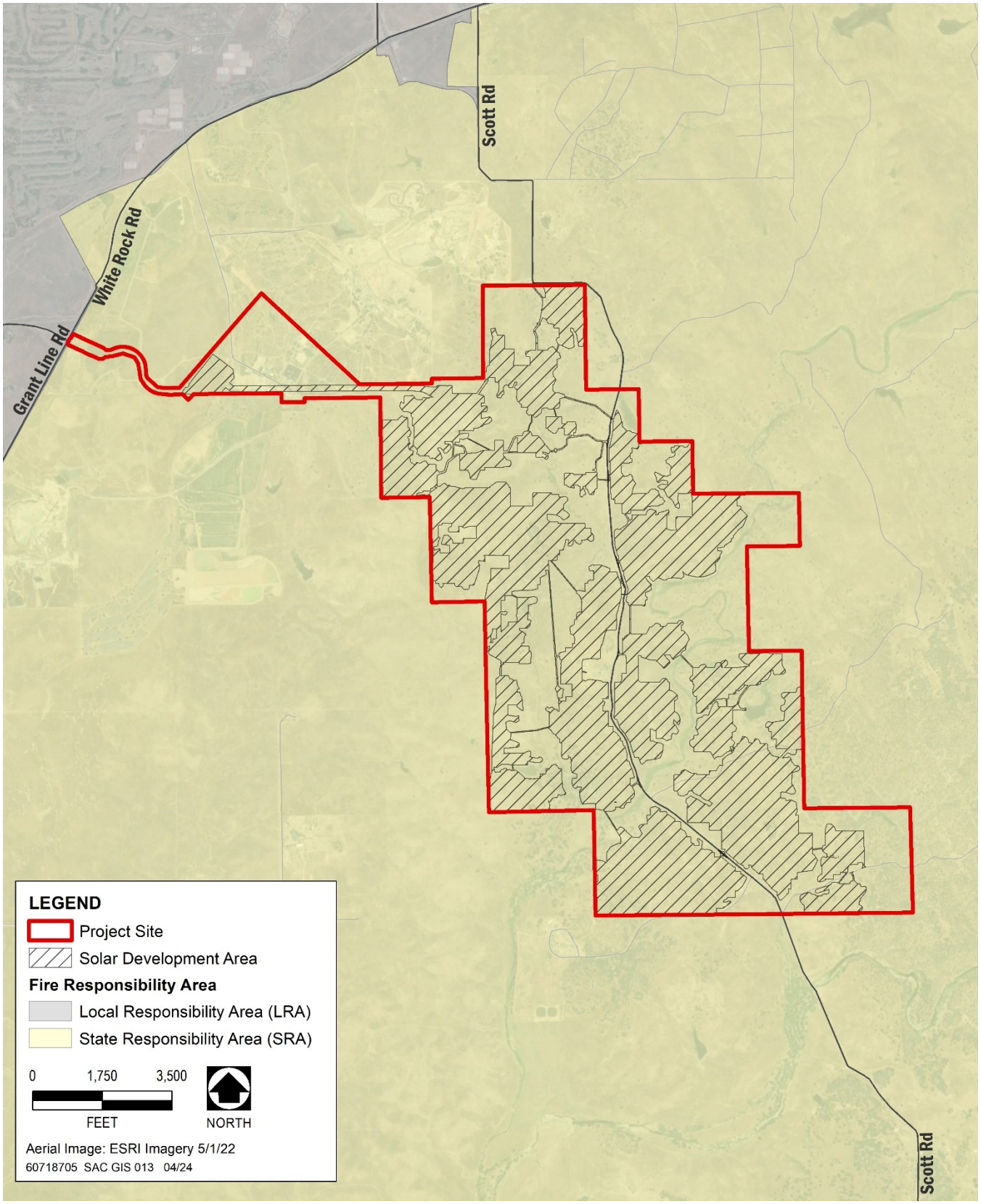
Fire prevention areas considered to be under state jurisdiction are referred to SRAs, and CAL FIRE is responsible for vegetation fires within SRA lands.[2] In general, SRA lands contain trees producing, or capable of producing, forest products; timber, brush, undergrowth, and grass, whether of commercial 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 within an SRA (CAL FIRE 2024). Most of the project site is designated by CAL FIRE as Moderate Fire Hazard Severity Zone with a portion of the southeastern area designated as a High Fire Hazard Severity Zone (Plate WF-2). The project site is within Battalion 1 of CAL FIRE's Amador-El Dorado Unit (CAL FIRE 2024).

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 not within an LRA. 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 2023).

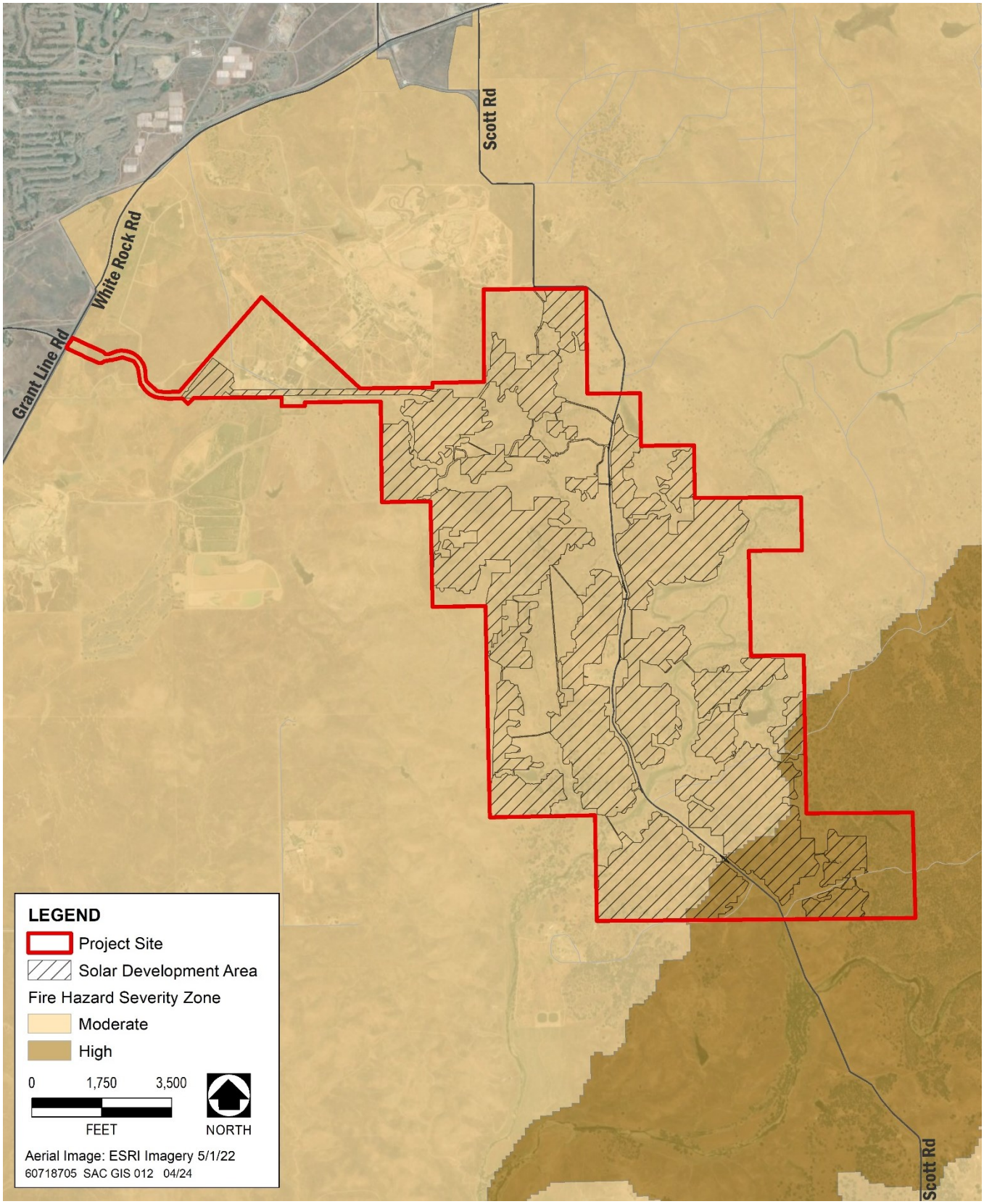
[2] California Public Resources Code (PRC) Sections 4125–4127 define a State Responsibility Area as lands in which the financial responsibility for preventing and suppressing wildland fire resides with the State of California.

Plate WF-1: Fire Responsibility Areas



Source: CALFIRE, 2024

Plate WF-2: Fire Hazard Severity Zones



Source: CALFIRE 2023

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

SENATE BILL 38: EMERGENCY RESPONSE AND EMERGENCY ACTION PLANS FOR BATTERY ENERGY STORAGE FACILITIES

Senate Bill (SB) 38 was signed into law in October 2023 and amended Section 761.3 of the California Public Utilities Code to add safety requirements for battery energy storage projects. Battery energy storage systems are regulated under Chapter 12 of the California Fire Code, which sets strict standards for installation and operation of such systems, including internal fire detection and suppression systems and require hazard assessments prior to commercial operation. SB 38 requires every battery energy storage facility in California to have an

emergency response and emergency action plan that cover the premises of the facility, consistent with Labor Code Sections 142.3 and 6401 and related regulations, including the regulatory requirements applicable to emergency action plans in Title 8 of the California Code of Regulations. Under SB 38, the owner or operator of the facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan and must submit the plan to the County and, if applicable, the city where the facility is located.

Specifically, the emergency response and action plan must:

- Establish response procedures for an equipment malfunction or failure;
- Include procedures, established in consultation with local emergency management agencies, that provide for the safety of surrounding residents, neighboring properties, emergency responders; and
- Establish notification and communication procedures between the battery storage facility and local emergency management agencies.

Additionally, the plan may consider responses to potential off-site impacts such as poor air quality, threats to municipal water supplies, water runoff, and threats to natural waterways. The plan also may include procedures for the local emergency response agency to establish shelter-in-place orders and road closure notifications when appropriate.

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 contain 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 4290

California PRC 4290 was adopted for establishing minimum wildfire protection standards in conjunction with building, construction, and development in SRAs. Under Section 4290, the future design and construction of structures, subdivisions, and developments in SRAs must provide for basic emergency access and perimeter wildfire protection measures as specified in Section 4290. These measures provide for road standards for emergency access, signing and building numbering, water supply reserves, and fuel breaks and greenbelts. Local standards that exceed those of Section 4290 supersede Section 4290.

SECTION 4291

Section 4291 of the PRC defines and describes fire protection measures and responsibilities for mountainous, forest, brush, and grass covered lands. These measures include, but are not limited to, the following:

- Maintenance of defensible space of 100 feet from each side and from the front or rear of a structure, but not beyond the property line.
- Removal of a portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe.
- Maintenance of a tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood. Construction or rebuilding of a structure must comply with all applicable state and local building standards.

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.[3]

LOCAL

SACRAMENTO COUNTY OPERATIONAL AREA EVACUATION ANNEX

The Sacramento County *Operational Area Evacuation Annex* (Sacramento County Office of Emergency Services 2018a) provides evacuation strategies that will 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.

[3] 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.

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

Policy 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.

Policy 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.

Policy 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.

Sacramento County Zoning Code

Though not explicitly pertaining to fire risk, solar energy facilities are required by the Sacramento County Zoning Code to meet all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the Public Utilities Commission regarding safety and reliability.

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 — Project-related construction would involve earthmoving activities, including excavating, grading, and drilling for pile foundations. The proposed switchyard in the northwestern corner of the project site would create approximately 8.25 acres of new impervious surfaces (600 feet x 600 feet). An infiltration basin (approximately 300 feet by 100 feet) would be constructed on the southwest side of the switchyard to control the associated stormwater flows (Kimley Horn 2023). 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 (if applicable), prepare a Stormwater Pollution Prevention Plan, prepare a Stormwater Pollution and 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 (Kimley Horn 2023). The results of hydrologic modeling performed for the Drainage Study confirmed that construction of the proposed solar field with proposed native surface/gravel roads and creek crossings, and the proposed substation, BESS, and maintenance yard, would not alter the existing drainage patterns (See Chapter 10, "Hydrology and Water Quality", for a detailed discussion of stormwater runoff and drainage changes). The project site is not situated in an area of the County where flood hazard evacuation zones have been designated (Sacramento County 2024a). 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

Construction

Emergency access during project construction would be provided from the new access road west of the proposed switchyard, and then along a portion of the existing Prairie City SVRA access road along the southern end of the SVRA, and from there into the project site. Emergency access would also be available from several new project access roads that would extend onto the site east and west from Scott Road.

The project applicant is required to obtain written authorization from the Sacramento County Department of Transportation (SACDOT) for construction of roadway improvements where lane closures are required, including an encroachment permit. The Right of Way Management Section acts as the lead agency in the review process and is responsible for the coordination and management of the review process. Traffic Control Plans and/or Detour Plans are reviewed and managed by the Right of Way Management Section and are required for all construction work within the road right of way which modifies vehicular, bicycle, and/or pedestrian traffic patterns. Traffic Control Plans for project-related construction of the aforementioned access roads would be prepared and implemented by the applicant and reviewed and approved by the County required to ensure the safe and efficient movement of traffic and emergency vehicles through construction work zones. Therefore, construction of the proposed project would not impair an adopted emergency response plan or emergency evacuation plan, and construction impacts would be **less than significant**.

Operation

The project site is not situated in an area of the County where flood hazard evacuation zones have been designated (Sacramento County 2024a). In the event of an evacuation from a wildland fire hazard, the project site is situated in Evacuation Zone 84: Sloughhouse & Rancho Murietta. For this evacuation zone, Scott Road, Grant Line Road, White Rock Road, and Prairie City Road are all designated routes leading east–west and north onto U.S. 50 (Sacramento County 2024b). Any necessary emergency evacuations in the vicinity of the project site would be coordinated by Sacramento County officials through the County Office of Emergency Services (OES). Sacramento County OES has prepared and maintains the *Sacramento County Evacuation Plan* (Sacramento County OES 2018b). As discussed in the Evacuation Plan, the primary mode of transportation that would be used during an evacuation would be the evacuees' private transportation resources. Law enforcement would be the primary agency for managing the movement of people during an evacuation. Traffic conditions are monitored along evacuation routes, and operational adjustments would be made by County officials as necessary during an evacuation to maximize throughput. Project operations would be monitored remotely through the control system, with only periodic inspections and maintenance activities that could require up to 10 employees per day. Therefore, it is unlikely that any workers would be on-site even if an evacuation were necessary, but in that event, either Scott Road or the project's new access road at the intersection of Grant Line and White Rock Roads would be used for evacuation from the site. These access roads would also provide emergency vehicle access to the site, as part of the project's emergency response and emergency action plan required by SB 38. Lock boxes would be placed at all gated entrances to allow access to emergency services at all times. Therefore, operation of the proposed project would not impair an adopted emergency response plan or emergency evacuation plan, and construction impacts would be **less than significant**.

Impact WF-2: Exacerbate Wildfire Risk

As stated above, 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 site is within an SRA and most of the project site classified as a Moderate Fire Hazard Severity Zone and a portion of the southeastern area designated as a Hight Fire Hazard Severity Zone (Plate WF-1 and Plate WF-2).

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 applicable 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 4290, which specifies road standards for emergency access, signing and building numbering, water supply reserves, and fuel breaks and greenbelts;
- 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. The above measures would be incorporated in as a project design feature that would be included in the project Mitigation Monitoring and Reporting Program (MMRP) and made enforceable by the County.

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 9, “Hazards and Hazardous Materials” for further detail). This requirement would be a project design feature that would be included in the project MMRP and made enforceable by the County. Additionally, as part of site preparation, the clearing of trees, removal of root balls, and backfilling of holes would occur. Merchantable timber would be hauled off-site for local use, and the remainder would be chipped on-site and temporarily stockpiled to assist in site stabilization and revegetation.

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 require periodic inspections and maintenance, as well as panel cleaning. 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 Direct Current (DC) arc faults,[4] 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 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.[5] 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 2023a). The PV system would be operated and maintained consistent with Section 1204 (Solar Photovoltaic Power Systems) of the California Fire Code and Article 690 (Solar Photovoltaic Systems) of the NEC.

Generally, gen-tie transmission structures are composed of nonflammable lattice steel structures, steel H-frames, or monopole steel structures. A variety of methods would be used for installation of underground collection lines. In other locations, aboveground collection lines would be used. Inverters, transformers, and electrical components of the 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 transformers 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 a centralized battery energy storage facility, 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 alternatively, the energy storage component may be distributed throughout the plant adjacent to individual power conversion centers. The storage component would be housed in modular structures similar in

[4] 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.

[5] 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.

appearance to cargo shipping containers. The battery storage structures would be self-contained and supported on a concrete mat foundation. The energy storage equipment would have a fire rating in conformance with local fire authority and County standards. The energy storage system would be installed following all applicable design, safety, and fire standards for the installation of energy storage systems, including, but not limited to, Article 608 of the NEC, NFPA 855 (Standards for the Installation of Stationary Energy Storage Systems), SB 38, and Section 1206 of the California Fire Code, all of which includes criteria for fire prevention and suppression associated with energy storage facilities installations. The BESS would be monitored through the Emergency Management System and Battery Management System. If the Battery Management System detects abnormalities outside of safe operating parameters of voltage, state of charge, state of health, or temperature, it will shut down the unit and/or block and will alert the operator. If a user identifies a risk, a unit, block, or full system can be shut down remotely. There are also manual shutoffs on-site in case of an emergency. 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. Lock boxes would be placed at all gated entrances to allow access to emergency services.

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. Emergency access and perimeter wildfire protection measures would be provided as specified in Section 4290. 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.

VEGETATION MANAGEMENT

During project operations, the project site would continue to support a combination of grassland species and non-invasive forbs. Grazing is proposed within the development area around the solar panels and the project may also require mechanical mowing and other forms of vegetation management on-site. Grazing would be governed by the project's *Agricultural Management Plan* (Dudek 2023b). 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 2023b). 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 2023b). Grass would be maintained at a height of approximately six inches in accordance with the County fire requirements (Dudek 2023b). 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 2023c). 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 be within an SRA on lands classified as a Moderate and High Fire Hazard Severity Zones. 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 fire 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 sheep and cattle grazing. During operation, the project site would be used for 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 2023b). 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 2023b). 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 the temporary stockpiling of wood chip during site clearing, before the wood chips are reused and distributed on-site, could increase the amount of fuel for wildfires, which could result in a **potentially significant** impact if vegetation and organic materials are not properly maintained on-site in a way that could exacerbate wildfire risk.

MITIGATION MEASURES

WF-2a. Demonstrate Compliance with the California Fire Code, California Building Code, and SB 38 Requirements, 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, California Building Code requirements, and SB 38, 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.

WF-2b. *Fire Hazard Reduction Measures for Temporary Wood Chip Stockpiling*.

To minimize the risk of fire hazards associated with the temporary stockpiling of wood chips on-site, the following management and safety practices shall be applied to the project:

- Select stockpile locations that are at least 100 feet away from structures, vegetation, and other combustible materials and ensure these locations are accessible for fire suppression equipment and personnel.
- Establish and maintain firebreaks around stockpile areas by clearing vegetation and other combustible materials and create 30-foot buffer zones around stockpiles to act as a barrier against fire spread.
- Conduct regular inspections of stockpile sites to identify and mitigate potential fire hazards.
- Spread and distribute wood chips in the intended areas of the site as soon as possible, in order to reduce the time that the materials are temporarily stockpiled on-site.

SIGNIFICANCE AFTER MITIGATION

The implementation of Mitigation Measure WF-2a 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 SB 38 requirements into project designs and by requiring that vegetation is managed on-site, particularly during the dry season (May through November). Additionally, the implementation of Mitigation Measure WF-2b would reduce the fire hazard risks related to temporarily stockpiling wood chips on-site. Therefore, impacts related to the potential for the proposed project to exacerbate wildfire risks would be **less than significant with mitigation**.

16 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 proposed 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 15).

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 CEQA Guidelines further require consideration of a "No Project" alternative (Section 15126.6[d][e]).

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 CEQA Guidelines Section 15126.6(a).

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 delivery of local utility-scale solar energy to support attainment of SMUD's 2030 Zero Net Carbon Plan targets, and 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 15 of this EIR address the environmental impacts of implementing the proposed project. Potentially feasible alternatives were developed with consideration of avoiding or lessening environmental impacts of the project, as identified in this document.

The significant and unavoidable impacts of the project are:

- Chapter 3, Aesthetics:
    - Have a substantial adverse effect on a scenic vista.
    - Substantially Damage Scenic Resources Within a State- or County-Designated Scenic Highway
    - Substantially degrade the existing visual character or quality of the project site and conflicts with applicable zoning and other regulations governing scenic quality.

- Chapter 14, Tribal Cultural Resources:
    - Cause a substantial adverse change in the significance of a Tribal Cultural Resource.

The potentially significant impacts of the project that can be reduced to less than significant with mitigation include:

- Chapter 3, Aesthetics:
    - Create substantial new sources of light and glare.
- Chapter 4, Agricultural Resources
    - Conversion of agricultural land to non-agricultural use.
- Chapter 5, Air Quality
    - 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 non-attainment under an applicable federal or state ambient air quality standard.
    - Expose sensitive receptors to substantial pollutant concentrations.
- Chapter 6, Biological Resources
    - 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, or 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) 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.
    - Conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or state HCP.

- Chapter 7, Climate Change
    - Generate Greenhouse Gas Emissions, either directly or indirectly, that may have a significant impact on the environment.
- Chapter 8, Cultural and Paleontological Resources
    - 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 Dedicated Cemeteries.
    - Damage to or destruction of unique paleontological resources during earthmoving activities.
- Chapter 9, Hazards and Hazardous Materials
    - Routine Transport, Use, or Disposal of Hazardous Materials or Reasonably Foreseeable Upset and/or Accident Conditions Involving the Release of Hazardous Materials.
    - Hazards from development on a site listed in California Government Code Section 65962.5 (Cortese List).
- Chapter 10, Hydrology and Water Quality
    - Impede Sustainable Groundwater Management of the Basin by Substantially Decreasing Groundwater Supplies or Interfering with Groundwater Recharge.
    - Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan.
- Chapter 12, Noise
    - Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise.
    - Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction.
    - Permanent Exposure of Off-Site Noise-Sensitive Receptors to Generation of Non-Transportation Noise Levels in Excess of Local Standards.
- Chapter 13, Traffic and Circulation
    - Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment).
- Chapter 15, Wildfire
    - Exacerbate wildfire risk.

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 No Project alternative, the Biological Resources Alternative (Alternative 1), and the Scott Road Buffer Alternative (Alternative 2). CEQA does not require a particular number of alternatives, only that a reasonable range be considered. 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 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 proposed 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.

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 15 of this EIR, the proposed project would result in significant and unavoidable impacts to aesthetics and tribal cultural resources.

Comparison of Alternatives

The comparison of alternatives provided in this chapter satisfies 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 approval. It is possible that the County could choose to balance the importance of each impact area differently, as well as take into consideration non-environmental factors (e.g., social, economic) 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. 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.

Distributed Power Generation

Distributed power generation projects such as residential rooftop and carport 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 certain 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, implementing this alternative would be outside the control of, and could not be implemented by the project applicant, SMUD, or the County with a reasonable timeline or cost. 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. The additional costs associated with a distributed approach would conflict with the project objectives, including: "Provide cost-effective delivery of local utility-scale solar energy to support attainment of SMUD's 2030 Zero Net Carbon Plan targets, and Integrated Resource Plan targets." Additionally, given recent averages for rooftop solar installations, the number of new installations required to deliver up to an additional 200 MW of solar electricity by 2026 render this alternative infeasible from a practical timing perspective. SMUD has documented in the Net Zero Plan and Integrated Resource Plan that renewable energy goals cannot be met 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 Reconfiguration Alternative

Once lands with willing partners were identified, preliminary environmental assessments were conducted on-site on 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 and biological resources, including minimizing impacts to aquatic resources within the project site. Additionally, all precontact indigenous sites identified through background research and field inventory have been excluded from the solar development area through project design. Traditionally culturally affiliated Native American tribes have been contacted by the County to provide input on precontact indigenous resources in close proximity to the solar development area, particularly P-34-000250 and P-34-000253. Site visits were also completed with tribal representatives in these areas. The applicant is required to avoid and preserve in place all recorded precontact indigenous archaeological sites, consisting of 14 sites in total, through mitigation required as a part of this EIR. This background research and site investigation resulted in utilization of approximately one-half of the project site to develop the solar development area. In consideration of the site planning work that produced the proposed project layout, the County has determined that an additional on-site reconfiguration alternative is infeasible other than the reconfigurations included as a part of Alternative 1 and Alternative 2.

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 relatively greater aesthetic impacts due to the height of wind turbines. 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 and this facility is owned and operated by Pacific Gas and Electric Company, and is proposed for closure. A new nuclear power plant is not feasible as an 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.

Alternative Site(s)

Alternative sites are often 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 for the proposed project, alternative locations were explored. Namely, alternative locations within the Sacramento County Urban Services Boundary (USB), sites that had been previously developed, and sites that have minimal land use and environmental resource constraints – with the added requirement that alternative locations, as with the proposed project site, must be located adjacent to existing SMUD transmission facilities with capacity for interconnection.

In order to develop a 200-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 purchasing or leasing multiple large parcels (approximately 249 acres or larger), at a location near existing SMUD transmission lines, and on parcels that do not contain prime farmland.

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.). Large parcels of land identified within Sacramento County but outside of the USB were not readily available for purchase due to their location or existing uses. 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). In other cases, sites that might represent potential for solar development have been planned for employment-generating projects within the unincorporated County. 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, and that could reduce potentially significant impacts compared to the proposed projects was ultimately infeasible.

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 proposed project to be delivered directly to SMUD customers. As discussed above, alternative sites within 75 feet of existing SMUD transmission lines were assessed. Yielding few potential sites, the County ultimately expanded its search to properties within 1,000 feet of existing transmission facilities. 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, under a scenario where multiple alternatives sites were assembled to deliver a similar level of renewable energy as the proposed project would be difficult to permit and develop on a timeline that would meet SMUD's 2030 Net Zero Plan goals. 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. Developing a solar project that would provide a similar amount of renewable energy, but making use of three, four, five or more sites would increase the amount of required infrastructure in total compared to the use of a single site. This would substantially increase the cost of the project, which could conflict with the project objectives, including: "Provide cost-effective delivery of local utility-scale solar energy to support attainment of SMUD's 2030 Zero Net Carbon Plan targets, and Integrated Resource Plan targets." For these reasons, while the County did carefully investigate this potential, an off-site location was determined to be infeasible.

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. 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 existing conditions would likely remain unchanged (i.e., property would remain as agricultural land) and agricultural activities would likely continue.

Alternative 1: Biological Resources Alternative

Alternative 1 is a proposed approximately 200 MW solar photovoltaic energy-generating facility located in the same general area as the proposed project, but would include shifting approximately 55 acres of solar panels from the proposed project's solar development area into a 480-acre parcel immediately adjacent to the southwest corner of the proposed project. This 480-acre parcel is not a part of the proposed project site or proposed project solar development area. Like the proposed project, Alternative 1 would be developed by Sacramento Valley Energy Center, LLC (applicant) to sell electricity and all renewable and environmental attributes to SMUD under long-term contracts to help meet California Renewables Portfolio Standard goals.

Under this alternative, the project site would be expanded to include an additional 480-acre property to the southwest of the existing project site. Under this alternative, the project applicant would remove approximately 55 acres of the area within the solar development area in the southern portion of the project site.

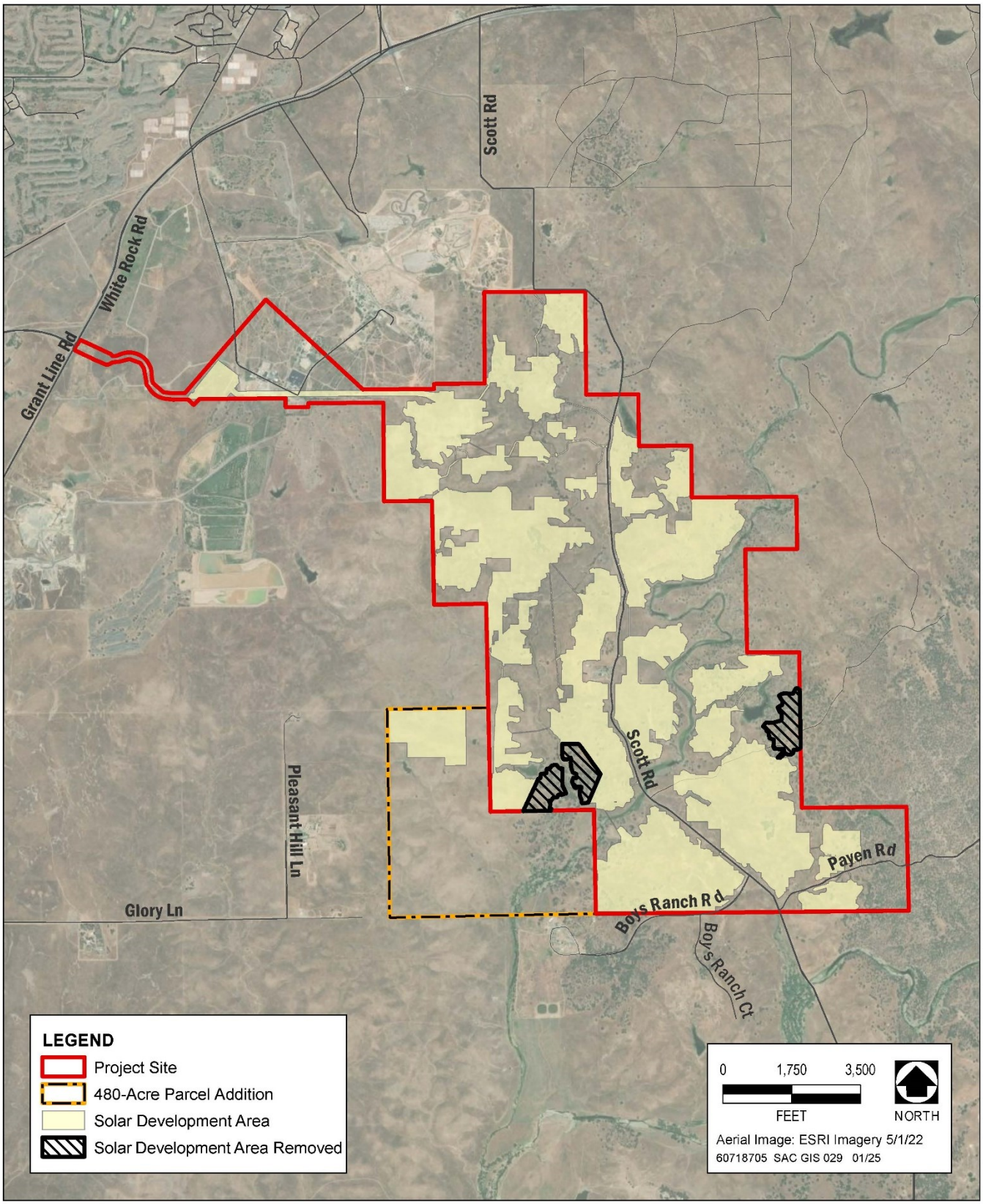
As identified in this EIR, the proposed project would not result in any significant and unavoidable impacts to biological resources with the exception of a cumulatively considerable impact related to oak woodlands. The focus of this alternative design refinement process was to reduce impacts to the amount of trees (including oak species) and the impact to oak woodlands that would be required for the project while accomplishing the basic project objectives.

Alternative 1 includes the same parcels as the proposed project, but the Alternative 1 site includes one additional 480-acre parcel immediately adjacent to southwest of the project site (APN 073-0020-015-0000). Alternative 1 site would increase the total project site acreage by 480 acres (a total of 3,184 acres compared to 2,704 acres) and would have a solar development area of approximately 1,412 acres. Refer to Plate ALT-1 for an illustration of the Alternative 1 site.

The same environmental setting described in Chapter 2, “Project Description”, applies also to Alternative 1. Generally, the Alternative 1 site is within the same topography, land uses and, and zoning as described in Chapter 2 for the proposed project. The facilities for Alternative 1 would be generally the same as those described for the proposed project in Chapter 2. 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.

The applicant has entered into an agreement to supply SMUD with the renewable energy for use in the SMUD service area. Alternative 1 would provide approximately the same amount of renewable energy as under the proposed project. 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.

Plate ALT-1: Alternative 1 – Biological Resources Alternative



ALTERNATIVE 2: SCOTT ROAD BUFFER ALTERNATIVE

The proposed project, as detailed in this EIR, would affect existing views available along Scott Road. The Circulation Element of the Sacramento County General Plan identifies Scott Road as warranting scenic corridor protection (Sacramento County General Plan, page 36). Policy CI-58 indicates that the County will "[c]ontinue to provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road." The impact to views from Scott Road is significant and unavoidable under the proposed project.

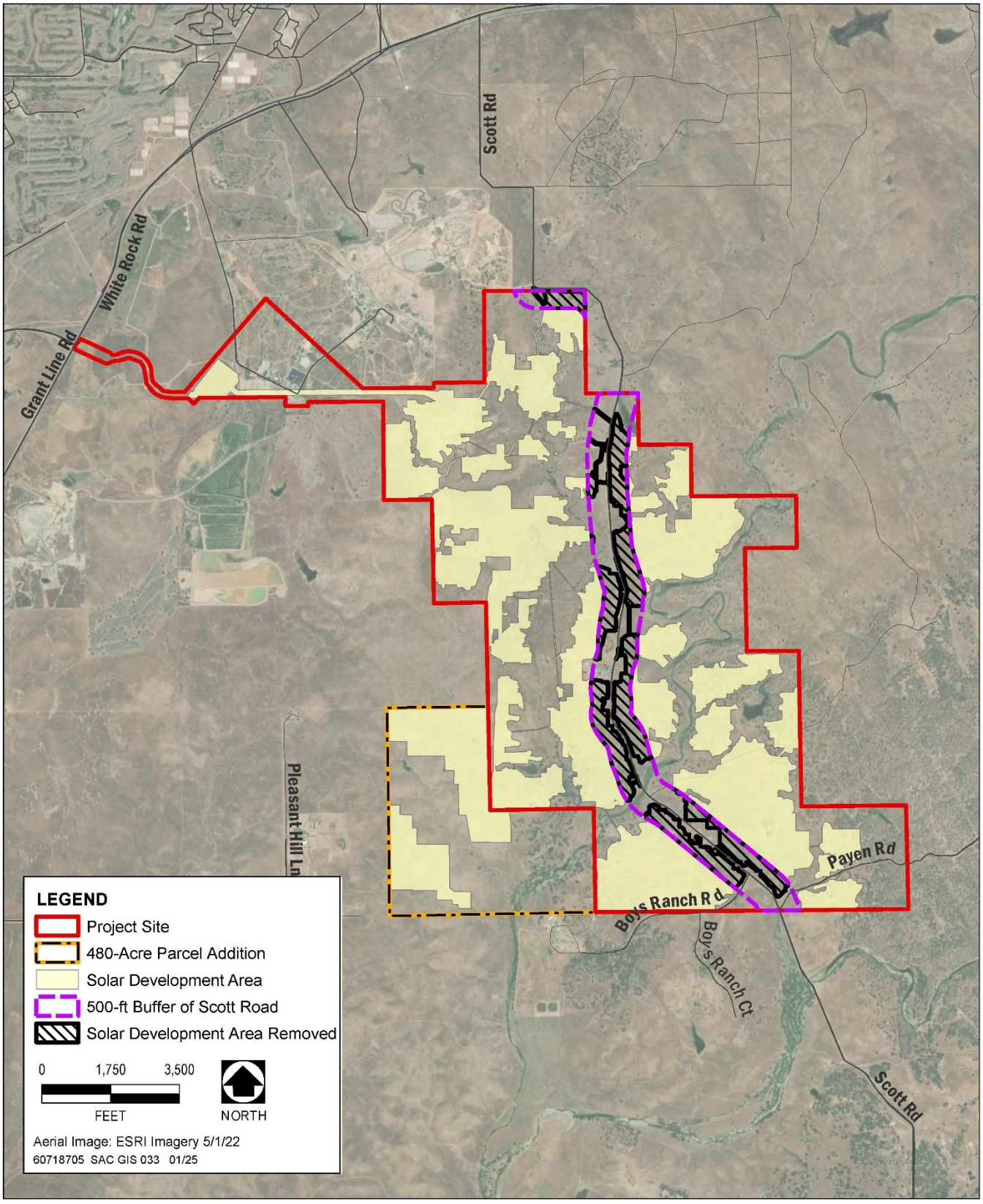
In the County's Zoning Code, "[t]he scenic corridor for a scenic highway or scenic country route shall include a horizontal distance of 500 feet on each side of the center line with a minimum distance of 300 feet beyond the right-of-way or the edge of the stream" (Sacramento County Zoning Ordinance, Chapter 7, page 7-45). Under Alternative 2, a 500-foot buffer would be applied from the centerline of Scott Road in each direction. Alternative 2 would not include any portion of the solar development area within 500 feet of the centerline of Scott Road, with the intent to reduce visual effects from this viewing location. This would result in the removal of approximately 181 acres of solar development area that, under the proposed project, would be within 500 feet of the centerline of Scott Road.

Similar to Alternative 1, additional solar development area under Alternative 2 would be added to a property that is southwest of the proposed project site so that Alternative 2 would have approximately the same acreage in solar development area as under the proposed project. Approximately 181 acres of solar development area would be located on this 480-acre parcel (APN 073-0020-015-0000), which would be added to the Alternative 2 site. Refer to Plate ALT-2 for an illustration of the Alternative 2 site.

The same environmental setting described in Chapter 2, "Project Description", applies also to Alternative 2. Generally, the Alternative 2 site is within the same topography, land uses and, and zoning as described in Chapter 2 for the proposed project. The facilities for Alternative 2 would be generally the same as those described for the proposed project in Chapter 2. Chapter 2, "Project Description", describes the energy generation process – this also applies to Alternative 2. The design and construction of the solar arrays, energy storage facilities, and auxiliary facilities (e.g., substation) required for Alternative 2 would be consistent with all applicable County building standards, as required by Sacramento County.

The applicant has entered into an agreement to supply SMUD with the renewable energy for use in the SMUD service area. Alternative 2 would provide approximately the same amount of renewable energy as under the proposed project. The energy storage elements of Alternative 2 would help balance supply and demand by capturing and storing renewable energy generated during daylight hours to meet peak evening demand.

Plate ALT-2: Alternative 2 – Scott Road Buffer Alternative



EVALUATION OF ALTERNATIVES

Table ALT-1 presents a comparative analysis between the proposed project and the No Project Alternative, Alternative 1, and Alternative 2.

Table ALT-1: Alternatives Analysis

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
Aesthetics	Because the proposed solar development would not occur and the site would continue to be used for rangeland, there would no potential for adverse impacts to scenic vistas, damage to scenic resources within a scenic roadway corridor, substantial degradation of visual character, or adverse daytime glare effects. Thus, the level of all aesthetics impacts would be **reduced**.	The tops of a few of the trees that would be preserved under Alternative 1 on the west side of Scott Road would be visible to motorists traveling along approximately 1,100 feet of the roadway; however, due to the rolling topography views of the trees from this public vantage point are generally blocked. With regards to the trees that would be preserved on the east side of Scott Road, due to the distance (approximately 0.75 mile) and the rolling topography, the trees are not visible from any public vantage points including Scott Road. Therefore, Alternative 1 would result in a **similar** level of impact from damage to scenic resources within a scenic roadway corridor, degradation of visual character, and potential glare effects along Scott Road. Because Alternative 1 would result in the same number of solar panels and a substation in the same locations within the viewshed from the Prairie City SVRA, the level of impact to the scenic vista, visual character as viewed from the SVRA, and creation of new glare effects for recreationists with the SVRA would be **similar**. Because the equivalent amount of solar panels and associated fencing and access roads that would be shifted to the 480-acre parcel to the southwest would not be visible from any public viewpoint under Alternative 1, there would be no adverse impacts to scenic vistas, damage to scenic resources within a scenic roadway corridor, substantial degradation of visual character, or adverse daytime glare effects from public viewpoints of this parcel. However, new solar panels would be installed approximately 1,000 feet at the closest point (nearly one-quarter mile) west of two existing rural residences on Pleasant Hill Lane. At this distance, the solar panels would be visible in the middleground, not the foreground. Because the topography in the 480-acre parcel is lower than the residences on Pleasant Hill Lane, background views of the Sierra to the east would be preserved. 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	Because Alternative 2 would implement a 500-foot buffer zone on both sides of Scott Road through the project site where no solar panels would be installed, the level of impact to scenic resources within a scenic roadway corridor (Scott Road), substantial degradation of visual character along Scott Road, and from potential glare effects along Scott Road would be **substantially reduced (but would remain Significant and Unavoidable, similar to the proposed project)**. Because Alternative 2 would result in the same number of solar panels and a substation in the same locations within the viewshed from the Prairie City SVRA, the level of impact to the scenic vista, visual character as viewed from the SVRA, and creation of new glare effects for recreationists with the SVRA would be **similar**. Because the equivalent amount of solar panels and associated fencing and access roads that would be developed within the new 480-acre parcel to the southwest would not be visible from any public viewpoint under Alternative 2, there would be no adverse impacts to scenic vistas, damage to scenic resources within a scenic roadway corridor, substantial degradation of visual character, or adverse daytime glare effects from public viewpoints of this parcel. However, new solar panels would be installed approximately 1,000 feet at the nearest point (nearly one-quarter mile) west of two existing rural residences on Pleasant Hill Lane. At this distance, the solar panels would be visible in the middleground, not the foreground. Because the topography in the 480-acre parcel is lower than the residences on Pleasant Hill Lane, background views of the Sierra to the east would be preserved. For purposes of disclosure, it is noted that the changes that would occur in middleground views to the east from the private residences on Pleasant Hill Lane under Alternative 2 would represent an **increased** level of impact related to substantial degradation of the existing visual character and quality and potential daytime glare effects.

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
		disclosure, it is noted that the changes that would occur in middleground views to the east from the private residences on Pleasant Hill Lane under Alternative 1 would represent an **increased** level of impact related to substantial degradation of the existing visual character and quality and potential daytime glare effects.	
Agriculture and Forestry Resources	Because the proposed solar development would not occur and the site would continue to be used for rangeland, there would no potential for adverse impacts from conversion of agricultural land (i.e., more than 50 acres of grazing land outside the USB) to non-agricultural use. Thus, the level of impact would be reduced.	Alternative 1 would result in the same overall amount of grazing land outside the USB used for solar development; thus, there would be a **similar** level of impact from conversion of agricultural land to non-agricultural use.	Alternative 2 would result in the same overall amount of grazing land outside the USB used for solar development; thus, there would be a **similar** level of impact from conversion of agricultural land to non-agricultural use.
Air Quality	Because the proposed solar development would not occur and the site would continue to be used for rangeland, there would no potential for adverse impacts from conflicts with the applicable air quality plan, 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, expose sensitive receptors to substantial pollutant concentrations (i.e., toxic air contaminants and naturally occurring asbestos), and exposure of sensitive receptors to odor emissions during construction. Thus, the level of impact would be **reduced**.	Alternative 1 would result in the same overall amount and type of solar facilities construction and operation in the same general area. Thus, there would be a **similar** level of impact from conflicts with the applicable air quality plan, and from contributions to 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. Because Alternative 1 would result in construction emissions associated with solar panels, fencing, and access roads on the 480-acre southwest parcel within 1,000 feet of two existing rural residences on Pleasant Hill Lane, there would be an **increased** level of impact from potential exposure of sensitive receptors to substantial pollutant concentrations (i.e., toxic air contaminants and naturally occurring asbestos) during construction, and potential exposure of sensitive receptors to odor emissions during construction.	Alternative 2 would result in the same overall amount and type of solar facilities construction and operation in the same general area. Thus, there would be a **similar** level of impact from conflicts with the applicable air quality plan, and from contributions to 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. Because Alternative 2 would result in construction emissions associated with solar panels, fencing, and access roads on the additional 480-acre parcel within 1,000 feet of two existing rural residences on Pleasant Hill Lane, there would be an **increased** level of impact from potential exposure of sensitive receptors to substantial pollutant concentrations (i.e., toxic air contaminants and naturally occurring asbestos) during construction, and potential exposure of sensitive receptors to odor emissions during construction.
Biological Resources	Under this alternative, the proposed solar development would not be constructed or developed, and the site would continue to be used for rangeland. Therefore, there would be no potential for adverse impacts related to loss and degradation of habitat for special-status species and potential take of individual and there would be no potential for adverse impacts related to loss or degradation of riparian habitat or other sensitive natural communities, include oak woodland.	Impacts related to habitat modifications or impacts to special-status species would generally be **similar to** the proposed project under this alternative. The same number of solar panels would be installed under this alternative, but they would be reconfigured to avoid some of the heavily wooded areas in the eastern and southwestern portions of the project site and the displaced panels would be added to a parcel outside of the proposed project site to the southwest. As with the proposed project, ground-disturbing	Impacts related to habitat modifications or impacts to special-status species would generally be **similar to** the proposed project under this alternative. The same number of solar panels would be installed under this alternative, but they would be reconfigured to avoid a 500-foot buffer on both sides of Scott Road and the displaced panels would be added to a parcel outside of the proposed project site to the southwest. As with the proposed project, ground-disturbing activities during construction of Alternative

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
	Additionally, under the No Project Alternative, there would be no potential for adverse impacts related to effects related to removal, fill, or hydrologic disruption of state or federally protected wetlands and would not interfere with wildlife corridors or wildlife nursery sites. Finally, under the No Project Alternative, conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or conflicts with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved Local, Regional, or State HCP would not occur because no project-related construction or development would occur under this alternative. Thus, the level of impact related to biological resources would be **reduced** compared to the proposed project.	activities during construction of Alternative 1 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. Mitigation Measure BR-1a (Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife) would be required during construction and decommissioning of Alternative 1, similar to the proposed project. Impacts related to the following species would generally be **similar to** the proposed project and all mitigation measures required for the proposed project would apply to Alternative 1: special status plants (Mitigation Measure BR-1b: Avoid, Minimize, and Mitigate for Impacts on Special-Status Plants would also apply to Alternative 1); Western Spadefoot (Mitigation Measure BR-1c: Avoid, Minimize, and Mitigate for Impacts on Western Spadefoot would also apply to Alternative 1); Northwestern Pond Turtle (Mitigation Measure BR-1d: Avoid, Minimize, and Mitigate for Impacts on Northwestern Pond Turtle would also apply to Alternative 1); Tricolored Blackbird (Mitigation Measure BR-1g: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird would apply to Alternative 1); Other Nesting Raptors and Migratory Birds (Mitigation Measure BR-1k: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds would apply to Alternative 1); Crotch's Bumble Bee (Mitigation Measure BR-1m: Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee would apply to Alternative 1); and Monarch Butterly. Impacts related to the following species would generally be **increased under Alternative 1** than the proposed project and all mitigation measures required for the proposed project would apply to Alternative 1: Burrowing owl due to a slight increase in impacts to grasslands (and a slight decrease in blue oak savanna impacts) in the parcel southwest of the project site where panels would be added under this alternative (Mitigation Measure BR-1e: Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat would	2 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. Mitigation Measure BR-1a (Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife) would be required during construction and decommissioning of Alternative 2, as with the proposed project. Impacts related to the following species would generally be **similar to** the proposed project and all mitigation measures required for the proposed project would apply to Alternative 2: special status plants (Mitigation Measure BR-1b: Avoid, Minimize, and Mitigate for Impacts on Special-Status Plants would also apply to Alternative 2); Western Spadefoot (Mitigation Measure BR-1c: Avoid, Minimize, and Mitigate for Impacts on Western Spadefoot would also apply to Alternative 2); Tricolored Blackbird (Mitigation Measure BR-1g: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird would apply to Alternative 2); Other Nesting Raptors and Migratory Birds (Mitigation Measure BR-1k: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds would apply to Alternative 2); Crotch's Bumble Bee (Mitigation Measure BR-1m: Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee would apply to Alternative 2); and Monarch Butterly. Impacts related to the following species would generally be **increased under Alternative 2** compared to the proposed project and all mitigation measures required for the proposed project would also apply to Alternative 2: Burrowing owl due to a slight increase in impacts to grasslands (and a slight decrease in blue oak savanna impacts) in the parcel southwest of the project site where panels would be added under this alternative (Mitigation Measure BR-1e: Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat would apply to Alternative 2), Foraging Habitat for Swainson's Hawk (due to the slight increase in impacts to grasslands in the parcel

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
		apply to Alternative 1), Foraging Habitat for Swainson's Hawk (due to the slight increase in impacts to grasslands) in the parcel southwest of the project site where panels would be added under this alternative (Mitigation Measure BR-1f: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Nesting and Foraging Habitat would apply to Alternative 1); Special-Status Aquatic Invertebrates due to the two SSHCP-mapped vernal pools and one SSHCP-mapped swale in the parcel southwest of the project site where panels would be added under this alternative (these conditions have not been field-verified, Mitigation Measure BR-1i: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp) however, it is likely that panels in this area could be designed to avoid these vernal pools and swales; and American Badger due to the slight increase in impacts to grasslands (and a slight decrease in blue oak savanna impacts) in the parcel southwest of the project site where panels would be added under this alternative (Mitigation Measure BR-1j: Avoid, Minimize, and Mitigate for Impacts on American Badger would apply to Alternative 1). Impacts related to the following species would generally be **reduced under Alternative 1** than the proposed project and all mitigation measures required for the proposed project would apply to Alternative 1: Nesting Habitat for Swainson's Hawk (due to the slight decrease in impacts to oak woodland) by relocating some of the panels in the parcel southwest of the project site where panels would be added under this alternative (Mitigation Measure BR-1f: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Nesting and Foraging Habitat would apply to Alternative 1); Valley Elderberry Longhorn Beetle and Their Habitat (due to the slight decrease in impacts to riparian areas) by relocating some of the panels in the parcel southwest of the project site where panels would be added under this alternative in predominantly grassland areas (Mitigation Measure BR-1h: Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle and Their Habitat); and Native Bats (due to some of the panels being removed from areas near aquatic features and relocated to grassland areas in the new parcel)	southwest of the project site where panels would be added under this alternative) (Mitigation Measure BR-1f: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Nesting and Foraging Habitat would apply to Alternative 2); and American Badger due to the increase in impacts to grasslands (and a decrease in blue oak savanna impacts) in the parcel southwest of the project site where panels would be added under this alternative (Mitigation Measure BR-1j: Avoid, Minimize, and Mitigate for Impacts on American Badger would apply to Alternative 2). Impacts related to the following species would generally be **reduced under Alternative 2** compared to the proposed project and all mitigation measures required for the proposed project would apply to the Alternative 2: Northern Pond Turtle (Mitigation Measure BR-1d: Avoid, Minimize, and Mitigate for Impacts on Northwestern Pond Turtle would also apply to Alternative 2); Nesting Habitat for Swainson's Hawk (due to the slight decrease in impacts to oak woodland) by relocating some of the panels in the parcel southwest of the project site (Mitigation Measure BR-1f: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Nesting and Foraging Habitat would apply to Alternative 2); Valley Elderberry Longhorn Beetle and Their Habitat (due to the slight decrease in impacts to riparian areas) by relocating some of the panels in the parcel southwest of the project site in predominantly grassland areas (Mitigation Measure BR-1h: Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle and Their Habitat); Special-Status Aquatic Invertebrates due to the reduced impacts to aquatic features within the 500-foot buffer on either side of Scott Road; however, there would be two SSHCP-mapped vernal pools and two SSHCP-mapped swales in the parcel southwest of the project site where panels would be added under this alternative (these conditions have not been field-verified, Mitigation Measure BR-1i: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp) however, it is likely that panels in this area could be designed to avoid these vernal pools and swales; and Native Bats (due to some of the panels being removed from areas near aquatic features and

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
		(Mitigation Measure BR-1l: Avoid, Minimize, and Mitigate for Impacts on Bats would apply to Alternative 1). In the additional parcel southwest of the project site where panels would be added under this alternative, there are two SSHCP-mapped vernal pools and one SSHCP-mapped swale where the solar development would occur which could support special status invertebrates (these conditions have not been field-verified). However, it is likely that panels in this area could be designed to avoid these vernal pools and swales. Mitigation Measure BR-1i: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp) and Mitigation Measure BR-3: Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan would apply to Alternative 1. This impact may be **slightly increased** compared to the proposed project. Alternative 1 would impact approximately 1,200 fewer trees than the proposed project, resulting in removal of approximately 3,590 trees compared to 4,787 trees. Thus, would have a **reduced impact** on oak woodlands compared to the proposed project. Mitigation Measure BR-2: Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities would apply to Alternative 1. The impacts to mapped National Wetlands Inventory (NWI) or National Hydrography Dataset (NHD) features would be **similar** for Alternative 1 compared to the proposed project. However, as mentioned above, in the parcel southwest of the project site where panels would be added under this alternative, there are two SSHCP-mapped vernal pools and one SSHCP-mapped swale where the solar development would occur (these conditions have not been field-verified). It is likely that panels in this area could be designed to avoid these vernal pools and swales. Mitigation Measure BR-3: Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally	relocated to grassland areas in the new parcel) (Mitigation Measure BR-1l: Avoid, Minimize, and Mitigate for Impacts on Bats would apply to Alternative 2). There are aquatic features (indicated by mapping completed by Dudek, 2023) within 500 feet on either side of Scott Road that would be impacted by the development of the proposed project that would be avoided by Alternative 2 development. There are no mapped NWI or NHD features in the 480-acre parcel addition southwest of the project site where 181 acres of solar panels would be relocated under this alternative (these conditions have not been field-verified). However, in the additional southwest parcel, there are two SSHCP-mapped vernal pools and two SSHCP-mapped swales where the solar development would occur (these conditions have not been field-verified). It is likely that panels in this area could be designed to avoid these vernal pools and swales. Mitigation Measure BR-3: Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan would apply to Alternative 2. This impact may be **reduced** compared to the proposed project. A large portion of the habitat types within the 500-foot buffer of Scott Road that would be avoided under Alternative 2 is categorized as blue oak savanna and the added 181 acres of solar panels in the 480-acre southwest additional parcel is categorized as valley grassland. Therefore, Alternative 2 would impact fewer trees than the proposed project, and would shift solar panels into valley grassland areas with fewer trees. Thus, Alternative 2 would have a **reduced impact** on oak woodlands compared to the proposed project. Mitigation Measure BR-2: Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities would apply to Alternative 2. The impacts to mapped NWI or NHD features would be **reduced** for Alternative 2 compared to the proposed project.

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
		Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan would apply to Alternative 1. Therefore, this impact would be **slightly increased** for Alternative 1 compared to the proposed project. Alternative 1 would have a **similar impact** compared to the proposed project related to interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeding the use of native wildlife nursery sites. Implementation of Mitigation Measures AG-1 (Implement the Agricultural Management Plan), BR-1e (Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat), and BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat) would apply to Alternative 1. Similar to the proposed project, the development related to Alternative 1 would also have limited impact on the riparian corridors surrounding the solar development area, which provide local and regional habitat connections and habitat for special status species. The functions along the identified Coyote Creek essential habitat connectivity area, including the Carson Creek corridor, would be maintained with Alternative 1 implementation. Alternative 1 would have a **similar impact** compared to the proposed project related to conflicts with any local policies or ordinance protection biological resources. Alternative 1 would be consistent with applicable plans, policies, and ordinances and Mitigation Measure BR-5 (Address Inconsistencies with Local Policies Protecting Biological Resources) would apply to Alternative 1 to address any inconsistencies. Alternative 1 would have a **similar impact** compared to the proposed project related to conflicts with the provisions of an adopted HCP, Natural Community Conservation Plan, or Other Approved Local, Regional, or State HCP. The majority of the solar development area for Alternative 1 is located outside of the Urban Development Area (UDA) and solar development is	There are aquatic features (indicated by mapping completed by Dudek, 2023) within 500 feet on either side of Scott Road that would be impacted by the development of the proposed project that would be avoided by Alternative 2 development. There are no mapped NWI or NHD features in the 480-acre parcel addition southwest of the project site where 181 acres of solar panels would be relocated under this alternative (these conditions have not been field-verified). However, as mentioned above, in the additional southwest parcel, there are two SSHCP-mapped vernal pools and two SSHCP-mapped swales where the solar development would occur (these conditions have not been field-verified). It is likely that panels in this area could be designed to avoid these vernal pools and swales. Mitigation Measure BR-3: Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan would apply to Alternative 2. Therefore, this impact would be **reduced** for Alternative 2 compared to the proposed project. Alternative 2 would have a **similar impact** compared to the proposed project related to interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeding the use of native wildlife nursery sites. Implementation of Mitigation Measures AG-1 (Implement the Agricultural Management Plan), BR-1e (Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat), and BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat) would apply to Alternative 2. Similar to the proposed project, the development related to Alternative 2 would also have limited impact on the riparian corridors surrounding the solar development area, which provide local and regional habitat connections and habitat for special status species. The functions along the identified Coyote Creek essential habitat connectivity area, including the Carson Creek corridor, would be maintained with Alternative 2 implementation.

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
		not a covered activity under the SSHCP. Therefore, similar to the project, Alternative 1 would not be subject to receive take coverage under the SSHCP and is not required to implement or comply with the provisions of the SSHCP. The Alternative 1 solar development area would have a slightly larger area within PPU 1 and the UDA than the proposed project (approximately 55 acres more). Similar to the proposed project, Alternative 1 would be consistent with provisions of the SSHCP because it would include mitigation measures that are consistent with all relevant general and Covered Species AMMs from the SSHCP. Alternative 1 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. Furthermore, the Alternative 1 solar development area would be decommissioned after the project's 35-year lifespan and may 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 **similar to** the proposed project.	Alternative 2 would have a **similar impact** compared to the proposed project related to conflicts with any local policies or ordinance protection biological resources. Alternative 2 would be consistent with applicable plans, policies, and ordinances and Mitigation Measure BR-5 (Address Inconsistencies with Local Policies Protecting Biological Resources) would apply to Alternative 2 to address any inconsistencies. Alternative 2 would have a **similar impact** compared to the proposed project related to conflicts with the provisions of an adopted HCP, Natural Community Conservation Plan, or Other Approved Local, Regional, or State HCP. The majority of the solar development area for Alternative 2 is located outside of the UDA and solar development is not a covered activity under the SSHCP. Therefore, similar to the project, Alternative 2 would not be subject to receive take coverage under the SSHCP and is not required to implement or comply with the provisions of the SSHCP. The Alternative 2 solar development area would have a larger area within PPU 1 and the UDA than the proposed project (approximately 181 acres more). Similar to the proposed project, Alternative 2 would be consistent with provisions of the SSHCP because it would include mitigation measures that are consistent with all relevant general and Covered Species AMMs from the SSHCP. Alternative 2 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. Furthermore, the Alternative 2 solar development area would be decommissioned after the project's 35-year lifespan and may 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 **similar to** the proposed project.
Cultural and Paleontological Resources	Because the proposed solar development would not occur and the site would continue to be used for rangeland, there would no potential for construction activities to cause a substantial adverse change in the significance of an	Most of the 480-acre parcel to the southwest under Alternative 1 was included in the study area evaluated in the cultural resources analysis for the proposed project and is anticipated to have a similar level of sensitivity as the solar development area	Most of the 480-acre parcel to the southwest under Alternative 2 was included in the study area evaluated in the cultural resources analysis for the proposed project and is anticipated to have a similar level of sensitivity as the solar development area

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
	archaeological resource, disturb human remains, or damage or destroy unique paleontological resources would be **reduced**.	under the proposed project since the additional parcel is directly adjacent to the proposed project site. Construction of solar panels, fencing, and access roads in this parcel under Alternative 1 would result in a **similar** level of impact from the potential to cause a substantial adverse change in the significance of an archaeological resource or disturb human remains. The southern portion of the project site where solar panels would not be installed under Alternative 1 is composed of the Salt Springs Slate formation, which is not paleontologically sensitive. Under Alternative 1, the solar panels, fencing, and access roads that would be installed on the 480-acre parcel to the southwest would be constructed in the Mehrten and Valley Springs Formations. The Mehrten Formation is considered to be of high paleontological sensitivity (see Table CR-2). Therefore, Alternative 1 would result in an **increased** level of impact from potential damage to or destruction of unique paleontological resources.	under the proposed project since the additional parcel is directly adjacent to the proposed project site. Construction of solar panels, fencing, and access roads in this parcel under Alternative 2 would result in a **similar** level of impact from the potential to cause a substantial adverse change in the significance of an archaeological resource or disturb human remains. Scott Road through the project site, including the 500-foot buffer that would be implemented under Alternative 2, consists of the Salt Springs Slate and Gopher Ridge Volcanics formations. These formations are not paleontologically sensitive. Under Alternative 2, the solar panels, fencing, and access roads that would be installed on the 480-acre parcel to the southwest would be constructed in the Mehrten and Valley Springs Formations. The Mehrten Formation is considered to be of high paleontological sensitivity (see Table CR-2). Therefore, Alternative 2 would result in an **increased** level of impact from potential damage to or destruction of unique paleontological resources.
Geology and Soils	Because the proposed solar development would not occur and the site would continue to be used for rangeland, there would no potential for geologic and soils hazards related to strong seismic ground shaking, liquefaction, soil erosion, unstable soil, soil expansion, and soil suitability for septic systems. Thus, the level of impact would be **reduced**.	Alternative 1 would result in the same overall amount and type of solar facilities construction and operation in the same general area and the same soil types, including the 480-acre southwest parcel. Thus, there would be a **similar** level of impact related to strong seismic ground shaking, liquefaction, soil erosion, unstable soil, soil expansion, and soil suitability for septic systems.	Under Alternative 2, removing solar development from the 500-foot buffer along Scott Road through the project site and placing it within the 480-acre southwest parcel would **reduce** the hazard from soil expansion (because the soils in the southwest parcel where solar development would occur have a low expansion potential). There would be a **similar** level of impact related to strong seismic ground shaking, liquefaction, soil erosion, unstable soil, and soil suitability for septic systems
Greenhouse Gas Emissions and Energy	Because the proposed solar project would not be implemented, there would no generation of greenhouse gases (GHGs) from construction activities, and therefore a **reduced** level of impact from potential cumulative climate change effects related to generation of GHGs. There would also be a **reduced** potential for wasteful, inefficient, or unnecessary consumption of energy resources during project construction. However, the **net benefit** to the region from increased energy production by directly supporting State plans for renewable energy during project operation would not occur.	As with the proposed project, Alternative 1 would provide support for the attainment of the SMUD 2030 Zero Net Carbon Plan target, which aims to reach zero carbon emissions in the SMUD power supply by 2030. As a solar energy generating facility, the proposed project and Alternative 1 would generate approximately the same amount of electricity from a GHG-free source and operational GHG emissions would be limited (**similar** impact). However, as with the proposed project, under Alternative 1 GHGs would also be emitted as a result of short-term project construction and decommissioning activities. Because the same amount of construction and	As with the proposed project, Alternative 2 would provide support for the attainment of the SMUD 2030 Zero Net Carbon Plan target, which aims to reach zero carbon emissions in the SMUD power supply by 2030. As a solar energy generating facility, the proposed project and Alternative 2 would generate approximately the same amount of electricity from a GHG-free source and operational GHG emissions would be limited (**similar** impact). However, as with the proposed project, under Alternative 2 GHGs would also be emitted as a result of short-term project construction and decommissioning activities. Because the same amount of construction and

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
		decommissioning would occur, Alternative 1 would result in a **similar** level of impact to cumulative climate change from construction-related generation of GHGs. Because the same amount of construction would occur, Alternative 1 would result in a **similar** consumption of energy during construction as compared to the proposed project. Under Alternative 1, the same amount of energy would be generated during operation of the solar facilities as the proposed project. Therefore, **similar** to the proposed project, Alternative 1 would help to meet existing energy demands and would not result in the establishment of new electrical service to currently unserved areas. **Similar** to the proposed project, Alternative 1 would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would result in a net increase in the region's energy resources by supporting State plans for renewable energy.	decommissioning would occur, Alternative 2 would result in a **similar** level of impact to cumulative climate change from construction-related generation of GHGs. Because the same amount of construction would occur, Alternative 2 would result in a **similar** consumption of energy during construction as compared to the proposed project. Under Alternative 2, the same amount of energy would be generated during operation of the solar facilities as the proposed project. Therefore, **similar** to the proposed project, Alternative 2 would help to meet existing energy demands and would not result in the establishment of new electrical service to currently unserved areas. **Similar** to the proposed project, Alternative 2 would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would result in a net increase in the region's energy resources by supporting State plans for renewable energy.
Hazards and Hazardous Materials	Because the existing ranching activities would continue and the proposed project would not be implemented, there would no potential hazards from routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, no potential hazard from development on a Cortese-listed site (i.e., the Aerojet contaminated groundwater plume), no potential for airspace hazards associated with Mather Airport flight paths due to tall structures, and no potential to interfere with an adopted emergency evacuation plan. Therefore, the level of impact would be **reduced**.	Shifting approximately 55 acres of solar development under Alternative 1 to the southwest 480-acre parcel would result in the same amount of solar facilities development, and would result in a **similar** level of impact from potential hazards from routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, development on a Cortese-listed site (i.e., the Aerojet contaminated groundwater plume), airspace hazards associated with Mather Airport flight paths due to tall structures, and interference with an adopted emergency evacuation plan.	Shifting approximately 181.5 acres of solar development under Alternative 2 from Scott Road to the southwest 480-acre parcel would result in the same amount of solar facilities development, and would result in a **similar** level of impact from potential hazards from routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, development on a Cortese-listed site (i.e., the Aerojet contaminated groundwater plume), airspace hazards associated with Mather Airport flight paths due to tall structures, and interference with an adopted emergency evacuation plan.
Hydrology and Water Quality	Because the proposed project would not be implemented and ranching operations would continue, there would be no potential for project-related construction and operational violation of water quality standards or substantial degradation of surface or groundwater quality, substantial increases in the rate and amount of stormwater runoff resulting in erosion and water quality violations and flooding, or conflicts with water quality and groundwater sustainability plans. Thus, the level of all hydrology and water quality impacts	Because the same amount of construction would occur and the same amount and types of solar facilities would be installed, Alternative 1 would result in a **similar** level of impact from project-related construction and operational violation of water quality standards or substantial degradation of surface or groundwater quality, substantial increases in the rate and amount of stormwater runoff resulting in erosion and water quality violations and flooding, or conflicts with water quality and groundwater sustainability plans.	Because Alternative 2 would result in a 500-foot buffer zone along Scott Road where solar facilities would not be developed, construction and operational activities would also be set back further from Carson Creek (which is the largest drainage feature), and Little Deer Creek. As shown in Plate ALT-2, the approximately 181.5 acres of solar facilities that would be developed on the southwest 480-acre parcel would be situated at least 1,000 feet, and primarily at least 2,000 feet or more, from the Carson Creek drainage through the southwest

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
	would be **reduced**.		parcel. Thus, Alternative 2 would result in a reduced potential for sediment and other pollutants to be washed into these creeks during project construction and operation, thereby **reducing** the level of impact from potential violation of water quality standards. Because the same overall amount of construction and operation would occur, Alternative 2 would result in a **similar** level of impact from substantial degradation of groundwater quality, substantial increases in the rate and amount of stormwater runoff resulting in erosion and water quality violations and flooding, or conflicts with water quality and groundwater sustainability plans.
Land Use and Planning	Because the proposed solar facilities project would not be implemented and the existing land use for rangeland would continue, there would be no potential for conflicts with land use designations and zoning, policies, plans, or other regulations that were adopted to avoid environmental impacts. Therefore, the level of impact would be **reduced**.	The project site and the southwest 480-acre parcel are zoned AG-80 and designated for agricultural use. Most institutional uses, including large commercial solar facilities, are allowed within areas zoned AG-80 if a conditional use permit is approved by the County Board of Supervisors. As with the proposed project, Alternative 1 would include a request for approval of the necessary conditional use permit, and if approved, Alternative 1 would be consistent with the existing zoning. Therefore, a **similar** level of impact related to consistency with land use designations and zoning would occur under Alternative 1. Because there are no existing residences within the added 480-acre parcel, Alternative 1 would not result in a physical division of an established community and therefore a **similar** level of impact would occur as compared to the proposed project. Similar to the proposed project, under Alternative 1, landscaping would be implemented along Scott Road. Although the landscaping would provide a softening effect in terms of the visual impacts from Scott Road, it would not provide complete screening. Furthermore, screening would not be provided (and would not be effective) from the Scenic Overlook or the trails at the Prairie City SVRA. Therefore, as with the proposed project, Alternative 1 would result in a **similar** level of impact from inconsistency with General Plan Policies PF-78 and CI-58, which were adopted to provide protection for visual resources in areas of high scenic value and along Scott Road.	The project site and the added 480-acre parcel are zoned AG-80 and designated for agricultural use. Most institutional uses, including large commercial solar facilities, are allowed within areas zoned AG-80 if a conditional use permit is approved by the County Board of Supervisors. As with the proposed project, Alternative 2 would include a request for approval of the necessary conditional use permit, and if approved, Alternative 2 would be consistent with the existing zoning. Therefore, a **similar** level of impact related to consistency with land use designations and zoning would occur under Alternative 2. Because there are no existing residences within the added 480-acre parcel, Alternative 2 would not result in a physical division of an established community, and therefore a **similar** level of impact would occur as compared to the proposed project. Because Alternative 2 would implement a 500-foot buffer zone on both sides of Scott Road through the project site where no solar panels would be installed, solar panels would still be visible, but they would only be situated within the viewer's middleground rather than also in the foreground. Therefore, the level of impact from conflicts with General Plan Policies PF-78 and CI-58 would be **reduced** along Scott Road. Because Alternative 2 would still result in the same number of solar panels and a substation in the same locations within the viewshed from the Prairie City SVRA, the level of impact from conflicts with General Plan Policies PF-78 and CI-58 for recreationists

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
			within the SVRA would be **similar**.
Noise and Vibration	Because the proposed project would not be implemented, there would be no potential for short-term construction source noise levels to exceed the applicable County standards at nearby noise-sensitive receptors; and no potential to expose sensitive receptors to groundborne noise and vibration levels that would exceed applicable standards resulting in potential human disturbance and damage to structures during blasting activities. Therefore, the level of impacts related to construction noise and vibration would be **reduced**.	Shifting the proposed solar facilities away from the trees to be preserved under Alternative 1 would not reduce the noise or vibration levels for the sensitive receptor at 3850 Scott Road. Furthermore, shifting this solar development acreage under Alternative 1 to the southwest 480-acre parcel could subject two rural residences on Pleasant Hill Lane to construction-related noise and vibration (at a distance of approximately 1,000 feet at the closest point) that could exceed the applicable standards – particularly if blasting is required. Therefore, Alternative 1 could result in new noise and vibration impacts to two different sensitive receptors that would not otherwise be affected under the proposed project, resulting in an **increased** level of impact.	Because Alternative 2 would result in a 500-foot buffer zone along both sides of Scott Road where solar facilities would not be installed, the potential noise and vibration impacts at the existing sensitive receptor at 3850 Scott Road would be **reduced** as compared to the proposed project. However, shifting the 181.5 acres of solar facilities under Alternative 2 from Scott Road to the southwest 480-acre parcel could subject two additional rural residences on Pleasant Hill Lane to construction-related noise and vibration (at a distance of approximately 1,000 feet at the closest point) that could exceed the applicable standards – particularly if blasting is required. Therefore, Alternative 2 could result in new noise and vibration impacts to two different sensitive receptors that would not otherwise be affected under the proposed project, resulting in an **increased** level of impact.
Public Services (Fire Protection)	Because the proposed project would not be implemented and ranching operations would continue, there would be no potential for increased need for fire protection services or facilities. Therefore, the level of impact related to fire protection would be **reduced**.	Because the same amount of construction would occur in the same general area with the same vegetation types, and the same amount and types of solar facilities would be installed, Alternative 1 would result in a **similar** level of impact related to fire protection services and facilities.	Because the same amount of construction would occur in the same general area with the same vegetation types, and the same amount and types of solar facilities would be installed, Alternative 2 would result in a **similar** level of impact related to fire protection services and facilities.
Traffic and Circulation	Because the proposed project would not be implemented and ranching operations would continue, there would be a continued very minor level of vehicular traffic related to ongoing activities within the proposed project site. Therefore, the level of impact related to transportation would be **reduced**.	Because the same amount of construction and decommissioning would occur under Alternative 1 in essentially the same location, this alternative would have a **similar** level of impact related to transportation. As under the proposed project, under Alternative 1, access to the project site would be provided via U.S. Highway 50 and local access to the Alternative 1 site would be from Prairie City Road and Scott Road. Alternative 1 would not include any permanent changes to the public roadway network. During operations, as under the proposed project, there would be a very low number of maintenance and inspection trips to the Alternative 1 site. As with the proposed project, Alternative 1 would require implementation of a construction traffic control plan.	Because the same amount of construction and decommissioning would occur under Alternative 2 in essentially the same location, this alternative would have a **similar** level of impact related to transportation. As under the proposed project, under Alternative 2, access to the project site would be provided via U.S. Highway 50 and local access to the Alternative 2 site would be from Prairie City Road and Scott Road. Alternative 2 would not include any permanent changes to the public roadway network. During operations, as under the proposed project, there would be a very low number of maintenance and inspection trips to the Alternative 2 site. As with the proposed project, Alternative 2 would require implementation of a construction traffic control plan.
Tribal Cultural Resources	Because the proposed solar development would not occur and the site would continue to be used for rangeland, there would no potential for	Tribal Cultural Resources, for the purposes of this EIR, are known to occur within the project site. Native oak species are major contributors to local	Tribal Cultural Resources, for the purposes of this EIR, are known to occur within the project site. Tribal consultation has identified that Scott Road follows

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
	construction or operational activities associated with new urban development to adversely affect Tribal Cultural Resources, and therefore the level of impact would be **reduced**.	indigenous history and lifeways. Alternative 1 would result in preservation of approximately 1,200 trees in three large stands of oak woodlands. Furthermore, these stands of oak woodlands are contiguous with other oak woodlands outside of the project site boundaries. The area where solar facilities would be shifted within the 480-acre southwest parcel does not include oak woodlands and would not result in the loss of trees. Therefore, the level of impact to Tribal Cultural Resources in terms of preservation of oak trees, including heritage trees, would be **reduced (but would remain Significant and Unavoidable, similar to the proposed project)**. However, under Alternative 1, the same amount of land in the same general area, which has been identified as part of the Tosewin Tribal Cultural Resource, would still be used for development of solar facilities. Therefore Alternative 1, as with the proposed project, would result in substantial new infrastructure and visual impacts that would substantially alter the historical setting and feeling of contributing elements of the California Register of Historical Resources-eligible Tosewin Tribal Cultural Resource. Therefore, the level of impact would be **similar**.	the route of another precontact foot path that was used by Native American peoples to trek to and from the Cosumnes River to White Rock. Heritage trees and stands of oak woodlands at the project site and in the project area are an important part of the known Tribal Cultural Resources. Alternative 2 would result in the preservation of additional individual oak trees within a 500-foot buffer zone along both sides of Scott Road through the project site, particularly in the northeastern portion of the project site. Alternative 2 would also result in the preservation of foreground views from Scott Road, and would therefore limit the visual impacts along Scott Road to middleground views. Therefore, the level of impact to Tribal Cultural Resources in terms of preservation of oak trees and the viewshed along Scott Road would be **reduced (but would remain Significant and Unavoidable, similar to the proposed project)**. However, under Alternative 2, the same amount of land in the same general area, which has been identified as part of the Tosewin Tribal Cultural Resource, would still be used for development of solar facilities. Therefore Alternative 2, as with the proposed project, would result in substantial new infrastructure and visual impacts that would substantially alter the historical setting and feeling of contributing elements of the California Register of Historical Resources-eligible Tosewin Tribal Cultural Resource. Therefore, the level of impact would be **similar**.
Utilities and Service Systems (Water Supply)	Because the proposed project would not be implemented and ranching operations would continue, there would be no increased demand for water supply. Therefore, the level of impact related to whether sufficient groundwater or surface water supplies would be available would be **reduced**.	Because the same amount of construction and decommissioning would occur in the same general area, and the same amount and types of solar facilities would be installed, Alternative 1 would result in same demand for increased water supply as compared to the proposed project. Therefore, the level of impact related to whether sufficient water supplies would be available to serve Alternative 1 and reasonably foreseeable future development during normal, dry, and multiple dry years would be **similar**.	Because the same amount of construction and decommissioning would occur in the same general area, and the same amount and types of solar facilities would be installed, Alternative 2 would result in same demand for increased water supply as compared to the proposed project. Therefore, the level of impact related to whether sufficient water supplies would be available to serve Alternative 2 and reasonably foreseeable future development during normal, dry, and multiple dry years would be **similar**.
Wildfire	Because the proposed project would not be implemented and ranching operations would continue, there would be no increased potential to exacerbate wildfire risk in a State-designated High	The southeast corner of the project site is designated by CAL FIRE as a High FHSZ. The 480-acre southwest parcel is designated as a Moderate FHSZ. The same overall amount of solar facilities would be	The southeast corner of the project site is designated by CAL FIRE as a High FHSZ. The 480-acre southwest parcel is designated as a Moderate FHSZ. The same overall amount of solar facilities would be

Environmental Topic Area	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
	Fire Hazard Severity Zone (FHSZ), and therefore the level of impact would be **reduced**.	developed under Alternative 1 as compared to the proposed project. However, because Alternative 1 would transfer a small area of the proposed solar facilities from a portion of the High FHSZ (approximately 16 acres) to a Moderate FHSZ within the 480-acre southwest parcel, the level of impact from the potential to exacerbate wildfire risk would be **reduced**. Because the same amount of solar facilities would be installed in the same general area and using the same roadways under Alternative 1, a **similar** level of impact would result from potential interference with emergency evacuation plans.	developed under Alternative 2 as compared to the proposed project. However, because Alternative 2 would transfer some of the proposed solar facilities from a High FHSZ along Scott Road to a Moderate FHSZ within the 480-acre southwest parcel, the level of impact from the potential to exacerbate wildfire risk would be **reduced**. Because the same amount of solar facilities would be installed in the same general area and using the same roadways under Alternative 2, a **similar** level of impact would result from potential interference with emergency evacuation plans.

Notes:
AG-80 = agricultural properties of 80 acres or more
AMMs = avoidance and minimization measures
CAL FIRE = California Department of Forestry and Fire Protection
FHSZ = Fire Hazard Severity Zone
GHGs = greenhouse gases
HCP = Habitat Conservation Plan
NHD = National Hydrography Dataset
NWI = National Wetlands Inventory
SMUD = Sacramento Municipal Utility District
SSHCP = South Sacramento Habitat Conservation Plan
SVRA = State Vehicular Recreation Area
UDA = Urban Development Area
USB = Urban Services Boundary

COMPARATIVE COMPARISON OF ENVIRONMENTAL EFFECTS

For comparison purposes, Table ALT-2 provides the impacts of the proposed project before mitigation, the No Project alternative, Alternative 1 (Biological Resources Preservation Alternative), and Alternative 2 (Scott Road Buffer Alternative).

- 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
- S: Indicates the project's impact is 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-2: Comparison of Alternatives to the Proposed Project

Impact Category	Proposed Project Before Mitigation	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
Aesthetics				
Impact AE-1: Have a Substantial Adverse Effect on a Scenic Vista	S	Less	Similar	Similar
Impact AE-2: Substantially Damage Scenic Resources within a State- or County-Designated Scenic Highway	S	Less	Similar	Less
Impact AE-3: Substantially Degrade the Existing Visual Character or Quality of the Project Site	S	Less	Similar	Less
Impact AE-4: Create Substantial New Sources of Light and Glare	PS	Less	Similar	Similar
Agricultural Resources and Land Use				
Impact AL-1: Conversion of Agricultural Land to Non-Agricultural Use	PS	Less	Similar	Similar
Air Quality				
Impact AQ-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	PS	Less	Similar	Similar
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	Similar	Similar
Impact AQ-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations	PS	Less	Greater	Greater

Impact Category	Proposed Project Before Mitigation	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
Impact AQ-4: Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People	LS	Less	Greater	Greater
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	Similar	Similar
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	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	Similar	Less
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	Similar	Similar
Impact BR-5: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, such as a Tree Preservation Policy or Ordinance	PS	Less	Similar	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	Similar
Climate Change				
Impact CC-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that May have a Significant Impact on the Environment	PS	Less	Similar	Similar
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	Similar

Impact Category	Proposed Project Before Mitigation	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
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	Similar
Impact CR-2: Cause a Substantial Adverse Change in The Significance of an Archaeological Resource Pursuant to Section 15064.5	PS	Less	Similar	Similar
Impact CR-3: Disturb Any Human Remains, Including Those Interred Outside of Dedicated Cemeteries	PS	Less	Similar	Similar
Impact CR-4: Damage to or Destruction of Unique Paleontological Resources During Earthmoving Activities	PS	Less	Greater	Greater
Hazards and Hazardous Materials				
Impact HAZ-1: Routine Transport, Use, or Disposal of Hazardous Materials or Reasonably Foreseeable Upset and/or Accident Conditions Involving the Release of Hazardous Materials	PS	Less	Similar	Similar
Impact HAZ-2: Hazards from Development on a Site Listed in California Government Code Section 65962.5 (Cortese List)	PS	Less	Similar	Similar
Impact HAZ-3: Airport Safety Hazards	LS	Less	Similar	Similar
Impact HAZ-4: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	LS	Less	Similar	Similar
Hydrology and Water Quality				
Impact HYD-1: Violate Water Quality Standards or Substantially Degrade Surface or Groundwater Quality	LS	Less	Similar	Less
Impact HYD-2: Impede Sustainable Groundwater Management of the Basin by Substantially Decreasing Groundwater Supplies or Interfering with Groundwater Recharge	PS	Less	Similar	Similar
Impact HYD-3: 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	PS	Less	Similar	Similar

Impact Category	Proposed Project Before Mitigation	No Project Alternative	Alternative 1: Biological Resources Alternative	Alternative 2: Scott Road Buffer Alternative
Impact HYD-4: Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan	PS	Less	Similar	Similar
Noise				
Impact NOI-1. Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise	PS	Less	Greater	Greater
Impact NOI-2. Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction	PS	Less	Greater	Greater
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	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	Similar	Similar
Impact TC-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (B)	LS	Less	Similar	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	Similar
Impact TC-4: Result in Inadequate Emergency Access	LS	Less	Similar	Similar
Tribal Cultural Resources				
Impact TCR-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	S	Less	Similar	Similar
Wildfire				
Impact WF-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan	LS	Less	Similar	Similar
Impact WF-2: Exacerbate Wildfire Risk	PS	Less	Similar	Similar

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines require evaluation of a No Project 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]). Alternative 1 has been developed with a focus on reducing potentially significant effects of the proposed project related to biological resources impacts – particularly the loss of oak woodlands. Alternative 2 has been developed with a focus on reducing significant effects of the proposed project related to aesthetics impacts – particularly in areas within 500 feet of Scott Road.

Table ALT-2 provides a summary comparison of the impacts of the proposed project and the alternatives. As indicated in Table ALT-2, the No Project alternative would reduce impacts to all resource areas listed above, except for Climate Change Impact CC-2 and Cultural Resources Impact CR-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, Alternative 1, or Alternative 2. For example, once operational, the proposed project, Alternative 1, and Alternative 2 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, Alternative 1, and Alternative 2 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, Alternative 1, and Alternative 2 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, Alternative 1, and Alternative 2, 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, Alternative 1, and Alternative 2 would build a 200 MW solar photovoltaic energy-generating facility. As identified above in Table ALT-2, Alternative 2 would result in reduced impacts to Aesthetics (Impact AE-2 and Impact AE-3), Biological Resources (Impact BR-2 and Impact BR-3), and Hydrology and Water Quality (Impact HYD-1) when compared to the proposed project. However, as indicated in Table ALT-2, Alternative 2 would result in increased impacts to Air Quality (Impact AQ-3 and Impact AQ-4), Cultural and Paleontological Resources (Impact CR-4), and Noise (Impact NOI-1 and Impact NOI-2) when compared to the proposed project. Therefore, Alternative 2 would overall have similar environmental impacts compared to the proposed project, and

for this EIR, the County considers both the proposed project and Alternative 2 to be environmentally superior to Alternative 1. Therefore, two environmentally superior alternatives (other than the No Project Alternative) have been identified.

The proposed project, Alternative 1, and Alternative 2 would meet all of the project objectives defined for the project. The proposed project and Alternative 2 would be environmentally superior to Alternative 1 because of the reduced impacts in the environmental topics listed above, particularly the reduced impacts on Aesthetics and Biological Resources, while still meeting all of the project objectives.

For these reasons, the proposed project and Alternative 2 would both be considered environmentally superior alternatives – these alternatives would result in the fewest impacts while still meeting all of the project objectives.

17 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 16 of this 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.

AESTHETICS

As detailed in Chapter 3, under Impact AE-1, implementation of the proposed project would result in a substantial adverse effect on multiple scenic vistas from within the Prairie City State Vehicular Recreate ion Area (SVRA). Therefore, the impact is significant. Even with mitigation measure recommended in the EIR, there are no feasible mitigation measures that would fully avoid this impact or reduce the impact to less than significant. Hence, the impact is significant and unavoidable.

As detailed under Impact AE-2, along Scott Road, the proposed project components would have varying degrees of visibility. While landscaping would not completely block views of the solar panels, it would be effective at screening and softening views of portions of the surface of the solar facility site and lower-profile project components from view. In addition, due to the proposed removal of native oak trees, some of the scenic resources within the existing viewshed would be adversely affected. Hence, this impact concerning damage to scenic resources and the scenic Scott Road viewshed is significant. Even with implementation of Mitigation Measures AE-2 and BR-2 in the short-term (i.e., within 5 years), the impact would be significant and unavoidable. After 5 years, the faster-growing interior live oak species have been selected to provide softening. At 3 years after planting approximately 30 percent of the oak seedlings would likely die, and approximately 50 percent of the surviving 3-year seedings would likely die after 15 years due to the difficulty of establishing native oaks from plantings. There are no other feasible mitigation measures. Hence, although the project does not impact a scenic highway, the long-term impact to scenic resources and the scenic viewshed from the segment of Scott Road that runs through the project site would be significant and unavoidable.

As explained under Impact AE-3, views from the Prairie City SVRA would be substantially altered and degraded due to changes from grass and oak trees to solar panels. The viewshed from trails in the southeast corner of the SVRA (Cougar Trail, Rattlesnake Trail, and Jack Rabbit Loop) would also change substantially. In addition, as described above, the viewshed from Scott Road would also be substantially degraded. Hence the impact

is significant from the Prairie City SVRA OHV Trails and Scott Road. Even with implementation of Mitigation Measures AE-2 and BR-2, the impact would be significant and unavoidable from the Prairie City SVRA. As mentioned above, for Scott Road, even with re-planting, the long-term impact from substantial degradation of visual character and quality of the viewshed from Scott Road through the project site would be significant and unavoidable.

Tribal Cultural Resources

As described in Chapter 14, numerous sites, both National Register of Historic Places (NRHP)-listed and NRHP-eligible have been recorded within the project site or within a half-mile radius of the project site. There are also numerous reports supporting the likelihood that Nisenan traversed the area and benefitted from Tribal Cultural Resources (TCRs) that once flourished. Given the presence of significant precontact archaeological resources, geomorphic and topographic conditions suited for some areas to contain buried features and/or deposits, and the conditions observed during fieldwork (variable ground surface visibility during survey), it is possible that additional unrecorded TCRs could be present. Archaeological TCRs 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 (CRHR) as TCRs, as would Native American human remains. Impacts to such resources, left unmitigated, would have the potential to result in a significant impact.

As described in Chapter 8, “Cultural and Paleontological Resources,” the implementation of Mitigation Measures CR-2a (Cultural Resource Management Plan), CR-2b Construction Monitoring), and CR-3a (Walltown Mining District Historic Study and Interpretive Plan) would generally reduce the potential impacts to any unknown archaeological sites or buried human remains that could be determined to be TCRs. In addition, implementation of Mitigation Measure TCR-1 (Tribal Cultural Resource Avoidance and Minimization Plan) would further address impacts to TCRs. The County has verified that the TCRs in the vicinity of Coyote Creek are unique and spiritually significant to the living descendants of its former inhabitants and would be significantly impacted by changes in viewshed and the contemporary, spiritually associated ecology. While the mitigation measures shall ensure the proper treatment of TCRs, they would not fully reduce the holistic impacts to the landscape and its contributing resources to below a level of significance, there are no feasible mitigation measures that would fully mitigate for this impact. As a result, despite implementation of the recommended mitigation measures, the impact on TCRs would be significant and unavoidable.

Significant Effects Which Could be Avoided with Implementation of Mitigation Measures

Agricultural Resources

As detailed in the discussion in Chapter 4, Impact AG-1, although 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 proposed

project could result a potentially significant impact based on Sacramento County General Plan Policy AG-5. Mitigation Measure AG-1 (Implement the Agricultural Management Plan) would require implementation of an Agricultural Management Plan, which would require continued agricultural use (e.g., grazing) of the project site through the operational life of the project and maintain the site's soil characteristics. As a result, the impact would be less than significant with implementation of Mitigation Measure AG-1.

Air Quality

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} and decommissioning-related emissions would exceed the established threshold for PM_{10} only. Therefore, the project's construction and decommissioning activities could result in a potentially significant temporary cumulatively considerable contribution to criteria air pollutants for which the region is in non-attainment of federal or state standards and thereby also could conflict with applicable SMAQMD air quality plans, including the Ozone Attainment and Progress Plan, $PM_{2.5}$ Maintenance Plan, and PM_{10} Implementation/Maintenance Plan. For these same reasons, the County's General Plan policies related to air quality require feasible strategies to reduce ozone precursors and particulate matter. 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 Off-Road Equipment Exhaust-Related Emissions during Construction and Decommissioning), AQ-2c (Submit Construction and Decommissioning Emissions Control Plans), and AQ-2d (Off-site Construction and Decommissioning Mitigation) would require enhanced fugitive dust control, employing equipment that meets or exceeds Tier 4 emissions standards along with newer haul trucks, submitting a Construction Emissions Control Plan, 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 zero threshold for particulate matter emissions. Mitigation Measure AQ-2e (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 less than significant under the applicable non-zero threshold.

As discussed under Impact AQ-3, equipment used for project construction and routine maintenance and operation would not result in localized air pollutant emissions at concentrations that are harmful to nearby sensitive receptors, however, according to the California Department of Conservation, the project site is located within areas categorized as moderately likely and least likely to contain naturally occurring asbestos (California Department of Conservation 2006). Exposure to soil dust containing asbestos can occur under a variety of scenarios, including grading and earth disturbing activities. Pursuant to SMAQMD guidance, impacts related to asbestos exposure shall be considered potentially significant if a project would be located in an area moderately likely to contain naturally

occurring asbestos. Implementation of Mitigation Measure AQ-3a would reduce impacts associated with generation of fugitive dust that potentially contains naturally occurring asbestos. If the site investigation determines that NOA is present on the project site, then implementation of a District-approved dust mitigation plan would reduce impacts related to construction and decommissioning activities in serpentinite soils.

The implementation of Mitigation Measure AQ-3a (Site Investigation for Potential Naturally Occurring Asbestos) would reduce the potential impacts related to naturally occurring asbestos to less than significant.

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 monitoring during construction and operations, as needed. Mitigation Measures BR-1c (Avoid, Minimize, and Mitigate for Impacts on 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 Nesting and 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 and Vernal Pool Tadpole Shrimp), BR-1j (Avoid, Minimize, and Mitigate for Impacts on American Badger), BR-1k (Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds), BR-1l (Avoid, Minimize, and Mitigate for Impacts on Bats), 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-1m, 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-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities) would be comprised of several measures that would reduce the impacts related to this potentially significant impact. These include requirements such as: the implementation of several mitigation measures, including BR-1a (Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife), BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat), BR-3 (Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan); implementation of Valley Needlegrass Grassland Protection Measures; and implementation of the Oak Woodland and Native Tree Mitigation. With implementation of this mitigation measure, impacts on riparian habitat or other sensitive natural communities would be less than significant. Mitigation Measure BR-3 (Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan) 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 AG-1 (Implement the Agricultural Management Plan), 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 Nesting and Foraging Habitat), and BR-3 (Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan) which would retain, restore, and compensate for any losses of grasslands and aquatic features such that local and regional habitat connectivity would be maintained. Therefore, this impact would be less than significant.

Finally, potential conflicts with local ordinances are discussed in Impact BR-5, specifically the County's Swainson's Hawk Ordinance and the County's policies concerning Oak Woodlands. To address this impact, Mitigation Measure BR-1f (Avoid, Minimize, and

Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat) would provide compensation for any loss of Swainson's Hawk foraging habitat consistent with the applicable County ordinance standards. As discussed in Chapter 6, without appropriate mitigation for the loss of protected trees and oak woodlands consistent with County policy and County approval to remove protected trees, the project would conflict with local policies protecting trees. The project would be required to implement a Tree Resource Revegetation Plan that is consistent with the Sacramento County General Plan polices CO-140 and CO-141. The implementation of required oak woodlands and native tree mitigation, as described in Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities), the impact of the proposed project would be considered less than significant because the project is required to avoid impacts to native trees retained within and adjacent to the solar development area, preservation of oak woodland canopy at a 1:1 ratio consistent with Sacramento County General Plan Policy CO-140 or equivalent preservation bank credit purchase, and establish plantings of native trees at a 1:1 tree replacement ratio – all under the direction of a qualified arborist and subject to review, approval, monitoring, and adaptive management directed by Sacramento County, and with required financial assurances to guarantee that an adequate level of funding is available to implement the acquisition, establishment plantings, and long-term maintenance and management of mitigation lands and/or to cover any additional mitigation options. Additionally, Mitigation Measure BR-5 (Address Inconsistencies with Local Policies Protecting Biological Resources) would resolve potential project-related inconsistencies with local policies protecting biological resources and this impact would be less than significant.

Climate Change

As discussed in Chapter 7 under Impact CC-1, greenhouse gas (GHG) emissions generated during project construction and decommissioning activities are anticipated to exceed the annual significance threshold established for GHG emissions. Although the construction-related emissions would be offset within the first year of operations through the renewable energy generated by the project, 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 use of alternative fuels. With implementation of Mitigation Measure CC-1, this impact would be reduced to less than cumulatively considerable and less than significant.

Cultural and Paleontological Resources

As detailed in Chapter 8 under Impact CR-2, all precontact indigenous sites identified through background research and field inventory have been excluded from the solar development area through project design. Site visits were also completed with tribal representatives in these areas. The Tribal Cultural Resources are discussed in detail within Chapter 14 "Tribal Cultural Resources".

There are 73 historic-era resources that intersect the solar development area, including mining sites and features, earthen berms and dams, rock alignments, and ditches. No

complex historic-era resources, such as homesteads or other sites with evident potential for buried archaeological resources have been identified in solar development area. These resources are largely functional and/or activity specific; no resources with substantial evident artifact or cultural deposits intersect the solar development area. Most documented archaeological sites intersecting or near the solar development area (n=59) are related to the CRHR-eligible Walltown Historic Mining District (P-34-002157), previously mapped to the northeast of the project site, and are considered contributors to the eligibility of the historic district. The remaining historic-era archaeological resources (n=14) identified within or adjacent to the solar development area are recommended to be ineligible for NRHP/CRHR listing. As described in Chapter 8, historic-era mining sites associated with the Walltown Historic Mining District (P-34-002157) should be assumed potentially eligible for NRHP/CRHR listing under Criterion A/1, Criterion C/3, and Criterion D/4. Given that no artifacts or artifact-bearing features were identified at any of the sites during recordation, there is a very low chance for additional deposits or features to be impacted or otherwise exposed during project activities. However, absent additional mitigation, there remains some minimal potential for project activities to result in a significant impact to undocumented historical resources. Therefore, impacts to the above archaeological resources, and unanticipated archaeological resource discoveries during construction, are considered potentially significant. Mitigation Measures CR-2a (Cultural Resource Management Plan [CRMP]), CR-2b (Construction Monitoring), and CR-2c (Walltown Mining District Historic Study and Interpretive Plan) would reduce the potentially significant project-related impacts on archaeological resources because the mitigation would avoid, document, test, establish communication and monitoring protocols, treat discovered resources appropriately, in accordance with pertinent laws and regulations, and outline a study and interpretive plan to convey information to the public.

Similarly, as discussed in Impact CR-3, no human remains have been identified within the solar development area, and all known precontact archaeological sites with the potential for containing human remains have been excluded from the solar development area through project design. However, if construction activities resulted in disturbance to any burial sites the impact would be potentially significant. Implementation of Mitigation Measures CR-2a (Cultural Resource Management Plan [CRMP]), CR-2b (Construction Monitoring), CR-3a (Treatment of Human Remains), and TCR-1 (Tribal Cultural Resource Avoidance and Minimization Plan) specifies pre-construction preparation and implementation of an awareness training and archaeological monitoring actions required to reduce impacts to unanticipated human remains in the event of accidental discovery during project implementation. Mitigation Measure CR-3a includes appropriate compliance with California Health and Safety Code Section 7050.5, Public Resources Code 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 impact in the event of the accidental discovery or recognition of any human remains during construction to less than significant.

As described in Impact CR-4 in Chapter 8, the project site is underlain by three paleontologically sensitive rock formations (Mehrten, Ione, and Chico Formations). 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 Mitigation Measure CR-4 (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.

Hazards and Hazardous Materials

As discussed in Chapter 9 under Impact HAZ-1, the project proposes the operation of a total of 3.72 acres of battery energy storage system (BESS). Since BESSs are regulated under Chapter 12 of the California Fire Code and given the several instances of large fires that have occurred in the state of California, SB 38 requires every battery energy storage facility in California to have an emergency response and emergency action plan that covers the premises of the facility. Several additional BESS-related safety standards and regulations are described in the "Regulatory Setting" Section of Chapter 9 that would be applicable to the project are described that would reduce the BESS-related fire hazards related to the project. Mitigation Measure HAZ-1 (Prepare an Emergency Response and Emergency Action Plan) would ensure that the applicable emergency response and emergency action plans be developed prior to issuance of grading permits. The plan must establish response procedures for an equipment malfunction or failure; include procedures that provide for the safety of surrounding residents, neighboring properties, emergency responders; and establish notification and communication procedures between the battery storage facility and local emergency management agencies. The plan shall be submitted to the County for review and approval. Implementation of this mitigation measure will bring the impact to less than significant.

Mitigation Measure AQ-3a (Site Investigation for Potential Naturally Occurring Asbestos) would require site investigations for parts of the project site that may contain NOA, and the implementation of this mitigation measure would reduce the impact of fugitive dust potentially containing NOA at the project site from potentially significant to less than significant with mitigation.

The project proposes new facilities in the northwestern portion of the project site that would overlie the Aerojet contaminated groundwater plume. Aerojet is conducting on-going remediation activities in this area. Construction--related excavation is not anticipated to encounter any contaminated groundwater. Existing groundwater wells on-site would not have sufficient capacity to produce the water required for construction and decommissioning and the potential for obtaining water through new wells drilled in either the younger Cenozoic units or the older Mesozoic units was evaluated. Mitigation Measure HAZ-2a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone) would prohibit groundwater wells within the 2,000-foot Consultation Zone established by County Municipal Code 6.28.000(G) and prohibits the use of existing groundwater wells within the 2,000-foot Consultation Zone for project-related water supply. Therefore, implementation of Mitigation Measure HAZ-2a would reduce the potentially significant impact to less than significant.

Implementation of Mitigation Measure HAZ-2b (Prepare and Implement a Health and Safety Plan [HASP]) would reduce the potentially significant impact from encountering previously unknown soil or groundwater contamination at the project site by requiring preparation and implementation of a HASP, consultation with the appropriate regulatory agencies, performance of a Phase II Environmental Site Assessment (ESA) with soil or groundwater testing, and remediation prior to resuming construction. Implementation of Mitigation Measure HAZ-2c (Coordinate with Aerojet to Close, Relocate, or Avoid Monitoring Wells) would reduce the potentially significant impact from damage to, or destruction of Aerojet remediation and monitoring wells by requiring that the project applicant coordinate with Aerojet during the project design phase to ensure that wells are properly avoided and appropriate access to Aerojet is provided, and to ensure that well locations are marked on construction drawings and in the field with installation of exclusionary fencing. Therefore, with implementation of Mitigation Measures HAZ-2a, HAZ-2b, andHAZ-2c, the impact from construction in a Cortese-listed site would be reduced to less than significant.

As described in Chapter 9, implementation of the proposed project would not result in an aircraft safety hazard or a safety hazard for people residing or working in the project area as related to Mather Airport, and this impact would be less than significant. Additionally, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and therefore this impact would be less than significant.

Hydrology and Water Quality

As discussed in Chapter 10, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and therefore this impact is considered less than significant. As described under Impact HYD-2, the project site overlies two different groundwater resource areas. During project operations, the project would require 10.5 acre-feet per year (AFY) of water over a 35-year period. The Water Supply Assessment for the project concluded that the operational water needs can be met by existing on-site groundwater wells. However, existing on-site groundwater wells could not support the project's construction or decommissioning demand of 253 AF, each. Therefore, the Groundwater Study assumed that water to meet the project's demands for construction and decommissioning (253 AF each) would be from groundwater obtained from Sloughhouse Solar Project wells or the Sacramento County Water Agency (SCWA), or a combination of the two sources (Dudek 2024b, Dudek 2024c, and SWCA 2024). Due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater availability, water demands for construction and decommissioning (253 AF each) were not assumed to be provided by existing on-site groundwater wells. As explained in the Groundwater Study, additional data and analysis would be required to accurately assess the availability of on-site groundwater for construction and decommissioning (Dudek 2024b). Additionally, as discussed in Chapter 9, "Hazards and Hazardous Materials", and the Groundwater Study prepared for the proposed project, the proposed project would not source groundwater from any area subject to restrictions of the EPA and the SWRCB on

groundwater applicable to the Aerojet Superfund remediation site and operable units, including groundwater extraction with the 2,000-foot consultation zone (Dudek 2024a).

The Groundwater Study indicated that if on-site groundwater wells were used for construction and decommissioning water needs, the temporary lowering of groundwater levels due to project well production for construction and decommissioning would likely only be a local effect, but additional studies would be required to evaluate potential interference to nearby wells (Dudek 2024b). Should on-site groundwater be used for construction and decommissioning, additional studies would need to be completed, and this impact is considered potentially significant. Implementation of Mitigation Measure HAZ-1a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone) and Mitigation Measure HYD-2 (Perform a Groundwater Hydrologic Study If On-stie Groundwater Wells are Utilized for Project Construction and Decommissioning Activities) would reduce the impact from groundwater drawdown on neighboring wells by requiring that hydrologic modeling be performed to demonstrate that such drawdown would not occur before issuance of project permit and the project's impacts form construction and decommissioning water demands related to potential interference with sustainable groundwater management would be reduced.

As discussed in impact HYD-3, a project-specific Level 3 Drainage Study was performed, but did not include the switchyard. Construction impacts to the alteration of drainage patterns or the addition of impervious surfaces that would result in increased erosion, exceed storm drainage systems, substantially degrade water quality, result in increased flooding, or impede or redirect flood flows for all project components would need to be included in a Level 4 Drainage Study. The study would be required to incorporate all project components, including the switchyard. Therefore, this impact would be potentially significant. Implementation of Mitigation Measure HYD-3 (Prepare a Project-specific Level 4 Drainage Study) would ensure the Level 4 study be prepared and approved prior to obtaining a construction permit. With this, the impact would be reduced to less than significant.

Implementation of Mitigation Measures HAZ-1a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone) and Mitigation Measure HYD-2 (Perform a Groundwater Hydrologic Study If On-site Groundwater Wells are Utilized for Project Construction and Decommissioning Activities) would reduce the potentially significant impact from groundwater contamination by limiting the area where groundwater wells can be drilled and used. Therefore, with implementation of Mitigation Measures HAZ-1a and HYD-2, the project's impacts from construction and decommissioning water demands would not conflict with sustainable groundwater management as set forth in the *South American Groundwater Subbasin Groundwater Sustainability Plan* (Sacramento Central Groundwater Authority et al. 2021).

Noise

Although noise would attenuate with distance, most project construction activities would still exceed the ambient levels and the County's exterior nighttime noise standard. 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 existing noise-sensitive receptors and create a substantial temporary increase in ambient noise levels. As described in Chapter 12, “Noise,” blasting would occur during the site preparation and trenching construction phases. The noise level associated with blasting would exceed the existing ambient noise levels. As a result, this impact is considered potentially significant. Mitigation Measures NOI-1a (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) and NOI-1b (Prepare and Implement a Blasting Plan) would entail eliminating certain construction activities at night (i.e., pile driving and blasting), 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 82 dB at 50 feet would be reduced to 50 dB exterior at 2,000 feet. These mitigation measures would preclude nighttime construction for certain construction activities within the project site (e.g., pile driving and blasting). Notably, areas further interior to the perimeter of project site where construction activities would take place are sufficiently distant from sensitive receptors to comply with 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. These mitigation measures would be implemented to reduce the impact related to temporary, short-term exposure of sensitive receptors to construction noise from potentially significant to less than significant.

In addition to ambient noise, short-term construction and decommissioning activities, such as blasting and pile driving, have the potential to expose sensitive receptors to groundborne noise and vibration levels that would exceed applicable standards that indicate human disturbance and potential structural damage. Due to this, the Barton Ranch residents could be exposed to excessive groundborne vibration related to human annoyance because this noise sensitive receptor is within the project site (but outside of the solar development area). The impact is potentially significant. Mitigation Measures NOI-1b (Prepare and Implement a Blasting Plan) and NOI-2a (Implement Vibration Control Measure) would implement a blasting plan that includes optional temporary relocation for the Barton Ranch residence for the duration of blasting activities within 0.5 miles of this receptor and vibration control measures, respectively. Mitigation Measure NOI-2b (Additional Vibration Controls for Blasting to Avoid Human Annoyance) would implement additional vibration controls related to impacts to the on-site sensitive receptor(s) that would reduce the impact to less than significant.

As discussed in impact NOI-3, the proposed project would introduce non-transportation noise sources from the operation and maintenance of the solar panels. The highest operational noise levels would occur from the inverter and Heating Ventilation and Air Conditioning (HVAC) system both of which are anticipated to be operational during nighttime hours. Mitigation measure NOI-3 would ensure that the applicant provides detailed design demonstrating that operation of the proposed project facilities would not

exceed County noise standards. Implementation of this measure would reduce the impact to less than significant.

Traffic and Circulation

As discussed in Chapter 13, primary access to the project site would be from Scott Road. As described under Impact TC-1, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. As described under Impact TC-2, the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (B). Additionally, as described under Impact TC-4, the project would not result in inadequate emergency access during construction, operations, or decommissioning.

Impact TC-3 explains that, given the scale of the project and rural setting in which the project would be constructed and decommissioned, the temporary addition of oversized vehicles, haul trucks, and worker vehicles could increase traffic hazards during the construction and decommissioning phases. The temporary addition of oversized vehicles, haul trucks and worker vehicles could increase traffic hazards, and the resulting impact would be potentially significant. To address potential traffic hazards during construction and decommissioning, Mitigation Measure TC-3 (Prepare and Implement a Traffic Control Plan), requires preparation of a traffic control plan for review and approval by the County Department of Transportation. The 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, with a focus on safety for cyclists on Scott Road. In addition, the traffic control plan would provide for notification of emergency responders regarding the planned construction activities. With the implementation of Mitigation Measure TC-3, the traffic hazards impact would be reduced to less than significant.

Wildfire

As discussed in Chapter 15 under Impact WF-1, the project would not substantially impair an adopted emergency response plan or emergency evacuation plan. As described under Impact WF-2, the project site is currently used for year-round sheep and cattle grazing. Operation of the project site would include new solar generating facilities co-located with dryland pasture for the continuation of grazing activities. An Agricultural Management Plan has been developed to manage grassland on-site with provisions to minimize fire risk as Mitigation Measure AG-1 which is detailed in Chapter 4, “Agricultural Resources.” Wildfire risks during construction, operation, and decommissioning would be offset by compliance with fire safety and wildfire suppression measures. However, installation of the project components in the previously undisturbed agricultural field would introduce structures that could make grazing less efficient and the temporary stockpiling of wood chip during site clearing, before the wood chips are reused and distributed on-site, could increase the amount of fuel for wildfires if vegetation and organic materials are not properly maintained on-site in a way that could exacerbate wildfire risk, which could result in a potentially significant impact. Implementation of Mitigation Measures WF-2a (Demonstrate Compliance with the California Fire Code, California Building Code, and SB 38 Requirements, and Manage Vegetation On-site) and WF-2b (Fire Hazard Reduction Measures for Temporary Wood Chip Stockpiling) would reduce the impact to

less-than significant. In demonstrating with California Fire Code requirements, California Building Code requirements, and SB 38 and that ignition-resistant building materials have been incorporated into project designs, the exacerbation of wildfire risks would be reduced. In addition, management and safety practices such as selecting stockpile locations at least 100 feet away from structures, vegetation, and other combustible materials, establishing and maintaining firebreaks around stockpile areas by clearing vegetation and other combustible materials, among other measures, would further reduce wildfire risks.

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.

Land Use

As discussed in Chapter 11, “Land Use and Planning,” the proposed project would not physically divide an established community. Additionally, as discussed under Impact LUP-1, 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 a proposed project and applicable plans, plan consistency is not generally a CEQA issue. Chapter 11, “Land Use and Planning,” discusses the County General Plan policies relevant to the proposed project that are listed in this chapter’s “Regulatory Setting” Section and are evaluated in this chapter.

As described in Chapter 11, “Land Use and Planning,” specific impacts and project consistency issues are discussed in other resource and issue areas that are addressed in each technical chapter of this document, as appropriate. The 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. While the proposed project would result in significant and unavoidable impacts to visual resources, TCRs, and cumulative tree impacts, as described above, County General Plan Policy PF-66 permits the Board of Supervisors and County Planning Commission to approve development projects for energy resources that are contrary to any of the policies of the Public Facilities Element when justification is provided through findings. In accordance with Policy PF-66, findings would be adopted as part of the Final EIR for the proposed project. 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 adverse physical impacts beyond those addressed in detail in the environmental chapters of this document (i.e., agricultural resources, air quality, biological

resources, cultural resources, etc.).[1] Therefore, this impact would be less than significant, and no mitigation is required.

Other Environmental Topics

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
- 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 material 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.

[1] "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).

Table SI-1: Construction-Related Energy Consumption

Fuel Type	Total Fuel Usage (gallons)	Annual Fuel Usage[1] (gallons)	Annual Energy Consumption (MMBtu)
Diesel	400,963	11,456	1,582
Gasoline	95,244	2,721	340

Source: Estimated by AECOM in 2024 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 200 megawatts (MWs). Operational and maintenance activities associated with the proposed project would include up to 10 daily vehicle trips and an additional 32 daily trips to account for water being trucked in for panel washing and grazing activities (which would not occur daily at the site), for a conservative maximum total of 42 daily vehicle trips. Vehicles used for these operational and maintenance related trips traveling to the project site could be diesel, gasoline, or electric-powered vehicles. As detailed in Table SI-2, such activities could result in the consumption of up to 1,087 gallons of diesel, 5,349 gallons of gasoline per year, and 2,026 kilowatt-hours per year; these totals represent a conservative worst-case year of vehicle and equipment use reflective of maximum daily operations and maintenance requirements. 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 1,236,000 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, and from a renewable source, 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)	1,236,000	kWh/year	4,217
Operational and Maintenance Trips - Diesel	1,087	gallons/year	150
Operational and Maintenance Trips - Gasoline	5,349	gallons/year	669
Operational and Maintenance Trips - Electricity	2,026	kWh/year	7

Source: Estimated by AECOM in 2024 using the information presented in Appendix AQ-1. See Appendix AQ-1 for detailed methodology and calculations.
Notes:
gallons/year = gallons per year; kWh/year = kilowatt-hours per year; MMBtu/year = million British thermal units per year.

The project is anticipated to be decommissioned after approximately 30[2] 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 as 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

[2] Project decommissioning activities were assumed to occur 30 years after the project becomes operational for purposes of air quality modeling. This does not change the current anticipated facility operational life of 35 years, as noted in Chapter 2, "Project Description".

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 the Renewables Portfolio Standard 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 Standard 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 to Measure GHG-03 from the County's Climate Action Plan, which indicates that the County will support the Sacramento Municipal Utility District (SMUD) in executing its 2030 Zero Carbon Plan by coordinating with SMUD to identify sites for renewable energy generation and storage projects on County-owned properties and other potential sites in the unincorporated county (Sacramento County 2024) 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 County 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.**

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 situated primarily in the rolling foothills along the west side of the Sierra Nevada; the northwest corner of the project site is situated at the eastern margin of the Sacramento Valley (Gutierrez 2011); 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 60 miles east near Lake Tahoe, approximately 60 miles north near Lake Oroville, and approximately 60 miles west in the Coast Ranges (Jennings and Bryant 2010, California Geological Survey 2022). The nearest known fault is the Bear Mountains Fault Zone, approximately 15 miles northeast of the project site, which is not classified as "active" (Jennings and Bryant 2010). Terracon Consultants, Inc. (Terracon) calculated that the peak horizontal ground acceleration for the project site (which considers the potential size and location of earthquakes and the resulting ground motions that can affect a particular site) would be 0.251g, which indicates that a very low level of seismic ground shaking is anticipated (Terracon 2021). Therefore, hazards from surface fault rupture and strong seismic ground shaking are unlikely.

The project site is situated on rolling land and with elevations that range from 170 to 275 feet above mean sea level. However, the finished grades would generally follow existing grades (Terracon 2021). 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 2021) 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 and shallow depth to bedrock. For the same reason, Terracon (2021) concluded that lateral spreading is also unlikely. 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 pile foundations. 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.

   As previously discussed in (1) above, landslides would not represent a hazard at the project site.

   Terracon (2021) reported that cohesionless, sandy soils were encountered at various locations across the site. Such soils have the tendency to cave and slough during excavations. Therefore, formwork may be needed for foundation excavations in those areas.

   The PV solar panels would be supported by W-section galvanized steel piles or similar design. Based on the results of site-specific soil borings, Terracon (2021) determined that the project site soils would be suitable for support of pilings, although pre-drilling may be required in the hillsides where shallow bedrock is present.

   Transmission towers, substation bus supports, end poles, and related equipment would be supported on drilled shaft foundations. The *Preliminary Geotechnical Engineering Report* contains site-specific drilled shaft foundation design parameters and recommendations to ensure the stability of proposed facilities (Terracon 2021).

   Based on the geotechnical engineering analyses, subsurface exploration, and laboratory test results, Terracon (2021) recommended that inverters within the solar fields and transformers within substation be supported on shallow foundation systems. The *Preliminary Geotechnical Engineering Report* contains design parameters and recommendations for these shallow foundation systems to ensure the stability of proposed facilities (Terracon 2021).

   Aggregate surface and asphalt pavement recommendations for the proposed access road are also addressed in the *Preliminary Geotechnical Engineering Report* (Terracon 2021).

   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. The *Preliminary Geotechnical Engineering Report* (Terracon 2021) contains recommendations to address this issue such as ceasing earthmoving activities during periods of heavy rain, using lighter equipment, and parking heavy equipment in areas that are not subject to perched groundwater.

   Finally, the County would perform a review of project plans and implement on-site inspections to ensure compliance with recommendations in the final geotechnical report. Therefore, this impact would be **less than significant**.

4. Be located on expansive soil, creating substantial direct or indirect risks to life or property.

   Based on the results of site-specific soil borings, the majority of near-surface soils encountered at the site within the proposed substation and solar array areas consisted of low to non-plastic soils, which may be used as engineered fill, provided they are stripped of any deleterious materials. However, borings in three locations encountered near-surface expansive soils. These potentially expansive soils should not be used as engineered fill beneath foundations or in roadway areas (Terracon 2021). The *Preliminary Geotechnical Engineering Report* recommended that a geotechnical engineer should be retained throughout the project's construction phase to determine whether on-site soils are suitable for use as engineered fill in proposed foundation and roadway locations (Terracon 2021). Expansive soils (where encountered) could either be excavated and removed, or treated with lime to reduce expansion. The County would perform a review of project plans and implement on-site inspections to ensure compliance with recommendations in the final geotechnical report. 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 may include the construction of permanent restroom facilities. If restroom facilities were installed, an on-site septic system would be required and 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".

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 loss of access to regionally important mineral deposits as a result of land uses that preclude mining is one of the issues that the California Surface Mining and Reclamation Act of 1975 (SMARA) was framed to address. SMARA mandates a two-phased mineral resource conservation process called classification–designation. Under SMARA, the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The State Mining and Geology Board's decision to designate an area is based on a classification report

prepared by the California Geological Survey (CGS) (formerly California Division of Mines and Geology) and on input from agencies and the public. CGS' priority for mineral land classification studies is based on areas that are most likely to urbanize in the future, with the goal of establishing an awareness of the availability of important resources by communicating with the appropriate lead agencies regarding the presence, location, and significance of mineral deposits within a particular region.

The project site is situated within the designated Greater Sacramento Area Production-Consumption Region for Portland cement concrete-grade aggregate, which includes all designated lands within the marketing area of the active aggregate operations supplying the Greater Sacramento urban center (Dupras 1999, O'Neal and Gius 2018). In compliance with SMARA, CGS has established the classification system shown in Table SI-3 to denote both the location and significance of key extractive resources.

Table SI-3: California Geological Survey Mineral Land Classification System

Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
MRZ-3	Areas containing inferred mineral occurrences of undetermined mineral resource significance.
MRZ-4	Areas where available data is inadequate for assignment to any other mineral resource zone category.

Note: MRZ = Mineral Resource Zone
Source: Dupras 1999

A variety of historic and active mining operations have been carried out in the vicinity of the project site. Historic placer and dredger mining activities for gold were conducted along ancestral channels of the American River from the late 1800s through the 1950s. A few small, scattered piles of cobbles and short, historic-era abandoned mine shafts indicate that a few areas of the project site were tested for gold mining potential, and there are historic records of two small gold mining claims including the former Martin J. Quinn Ranch Gold Mine (on the north side of Carson Creek, southwest of the Barton Ranch buildings), and a former placer gold deposit recorded along Deer Creek on the west side of Scott Road (The Diggings 2024). However, a review of the mineral land classification maps for the project site prepared by CGS indicate that the project site is not classified for gold resources (Dupras 1999, O'Neal and Gius 2018).

As a result of large-scale historic dredger mining activities for gold, there are extensive pile of tailings (composed of cobble, gravel, and silt) throughout the vicinity of the project site to the east, north, and south, and several of these areas are being activity mined for portland cement concrete (PCC) grade aggregate. However, these

resources are not present within the project site, which is classified by CGS as MRZ-1 and MRZ-3 (areas of no known mineral resources; and areas where mineral resources are inferred, but are not specifically known to be present) (O'Neal and Gius 2018). Regionally important known mineral resource deposits are classified by CGS as MRZ-2.

There is a large deposit of kaolin clay southwest of the project site in the Michigan Bar area, which has been mined continuously since the 1860s and which is the largest active kaolin clay mining site in the greater Sacramento region. Kaolin clay is extracted from the Ione Formation, and is widely used in a variety of applications including ceramics, porcelain, earthenware, curved roof tiles, plastics, linoleum, cosmetics, and pharmaceuticals. CGS has indicated that based on the amount of known kaolin clay deposits and the rate at which mining has been occurring, sufficient quantities of this resource are available for many decades (at least 50 years into the future) (Dupras 1999). The Ione Formation outcrops in a north to south-trending band through the project site, primarily along the west side of Coyote Creek (on the west side of Scott Road) (see Plate CR-2 in Chapter 8, "Cultural and Paleontological Resources"). A portion of this area, at the southern end of the outcrop near the Barton Ranch buildings, has been classified as MRZ-3 meaning that kaolin resources are inferred, but are not known to be present (Dupras 1999). Project-related facilities in this area would consist of solar panels on pole-mounted foundations. The proposed project lifespan is projected to be 35 years, at which point decommissioning activities would occur, including the removal of the solar panels and pole foundations. At that point in time, if a mining entity desired to pursue exploratory operations to determine whether or not kaolin clay resources were in fact present, and then to mine the resources if they exist, such activities could occur. However, the project site is not classified by CGS as containing any known regionally significant deposits of kaolin clay resources (i.e., MRZ-2) (Dupras 1999). Finally, although blasting activities may be necessary at the project site in some areas of hard bedrock to install the poles and foundations for the solar panels, blasting would not be necessary within the Ione Formation, and thus blasting would not result in a loss of existing kaolin clay resources (if any such deposits are present).

Therefore, the proposed project would not result in the loss of availability of any known regionally important mineral resources (gold, PCC-grade aggregate, or kaolin clay), and thus 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.

   The Conservation Element of the Sacramento County General Plan (Sacramento County 2017) indicates that the County's locally important mineral resource recovery sites are the same as the regionally important mineral sites designated by CGS. Therefore, for the same reasons explained in criterion (1) above, the proposed project would not result in the loss of availability of any known locally important mineral resources (gold, PCC-grade aggregate, or kaolin clay), and thus there would be **no impact**.

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. 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 18 months. The number of workers expected on-site during construction of the proposed project would vary over the construction period and would average 250 workers per day. Decommissioning and site restoration activities are expected to require a similar workforce as construction and occur over 12 months. The majority of workers is 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 2022 there were 52,441 persons employed in the construction industry in Sacramento County (U.S. Census Bureau 2022). 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?

   There is one residence within the project site, but it is outside of the solar development area and would not be demolished as part of the project. 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.

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 California Department of Forestry and Fire Protection (CAL FIRE) Battalion 1 provides fire protection services to the project site and surrounding area. As discussed in Chapter 14, "Wildfire", the proposed project would incorporate California Fire Code, California Health and Safety Code, Senate Bill (SB) 38, 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.

   Because the proposed project includes a battery energy storage system (BESS), the project would be required to comply with SB 38 and would include an emergency response and emergency action plan that cover the premises of the facility. Under SB 38, the owner or operator of the facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan and must submit the plan to the County and, if applicable, the city where the facility is located. As discussed in Chapter 9, "Hazards and Hazardous Materials", the project would comply with current BESS Safety Standards that are summarized in the "Regulatory Setting" Section of Chapter 9. Additionally, implementation of Mitigation Measure HAZ-1 (Prepare an Emergency Response and Emergency Action Plan) would ensure there is an emergency plan that would establish response procedures for an equipment malfunction or failure, including procedures that provide for the safety of surrounding residents, neighboring properties, emergency responders, and establish notification and communication procedures between the battery storage facility and local emergency management agencies. Additionally, as discussed in Chapter 15, "Wildfire", implementation of Mitigation Measure WF-2a (Demonstrate Compliance with the California Fire Code, California Building Code, and SB 38 Requirements, and Manage Vegetation On-site) would ensure the project is compliant with the requirements of SB 38.

   The project applicant is required to comply with Federal and State Occupational Health and Safety Administration regulations during construction and

decommissioning in order to minimize the likelihood of workplace injuries and accidents requiring emergency medical attention. Project design would incorporate applicable State and local requirements to reduce the dependence on CAL 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. Therefore, this impact would be **less than significant**.

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 2024). 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 locked 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 applicant has coordinated with the Prairie City State Vehicle Recreation Area to modify kart-track facilities to better accommodate the construction of the proposed project gen-tie line. Changes were necessary to accommodate the placement of a gen-tie pole via moving bleachers and non-permanent garage-pit area as well as the

track's office. Other improvements are not necessary for gen-tie construction and operation, but are a commitment by the applicant to improve the user experience for go-kart track users beyond what is required for the gen-tie line. The track modifications are anticipated to occur during the 18-month construction window, but ultimately would be completed at the timing and discretion of California State Parks. Temporary closures of the track are anticipated to be necessary to accommodate construction of the gen-tie, and would be coordinated with park officials, as necessary. The improvements would involve the movement of temporary infrastructure such as bleachers, relocation of the track office, removal of approximately 276 feet of existing track and addition of approximately 403 feet of new track. The on-site canopy/structure and office/retail modular units associated with the track would be moved from its current location approximately 100 feet north. The improvements are entirely contained within the area currently fenced for the cart track or in the adjacent parking lot. Track improvements would be carried out at the discretion of state parks, and state parks will be responsible for any additional surveys, permits, or permissions associated with the improvements. The potential temporary minor interruption in the availability of these facilities at the Prairie City State Vehicle Recreation Area would not create demand for recreational uses that would cause physical deterioration at other existing State Vehicle Recreation Areas that would represent a significant adverse environmental impact.

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. This impact would be **less than significant.**

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.

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.

   As mentioned above under the "Parks" in the "Public Facilities" Section above, the applicant has coordinated with the Prairie City State Vehicle Recreation Area to modify kart-track facilities to better accommodate the construction of the proposed project gen-tie line. Changes were necessary to accommodate the placement of a gen-tie pole via moving bleachers and non-permanent garage-pit area as well as the track's office. Other improvements are not necessary for gen-tie construction and operation, but are a commitment by the applicant to improve the user experience for go-kart track users beyond what is required for the gen-tie line. The track modifications are anticipated to occur during the 18-month construction window, but ultimately would be completed at the timing and discretion of California State Parks. Temporary closures of the track are anticipated to be necessary to accommodate construction of the gen-tie, and would be coordinated with park officials, as necessary. The improvements would involve the movement of temporary infrastructure such as bleachers, relocation of the track office, removal of approximately 276 feet of existing track and addition of approximately 403 feet of new track. The on-site canopy/structure and office/retail modular units associated with the track would be moved from its current location approximately 100 feet north. The improvements are entirely contained within the area currently fenced for the cart track or in the adjacent parking lot. Track improvements would be carried out at the discretion of state parks, and state parks will be responsible for any additional surveys, permits, or permissions associated with the improvements.

   The proposed project would not include the construction of new recreational facilities; however, it would include the reconfiguration of the kart-track facilities that are part of the Prairie City State Vehicle Recreation Area, as requested by California State Parks and as described above. 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 this impact would be **less than significant**.

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

As summarized in the Groundwater Resource Impact Analysis (Groundwater Study, included as Appendix HYD-1), previous well yield studies included borehole testing in the older Mesozoic bedrocks units at the project site. The results indicated that although initial groundwater level depths were generally shallow (groundwater was obtained relatively near the surface), the drawdowns for the given pumping rates indicated relatively low specific capacities (meaning the well yields were low). The project's annual operational demand of 10.5 AFY equates to approximately 6.6 gallons per minute, and therefore the Groundwater Study concluded that one or more of the sample boreholes that were previously drilled on the project site in the Mesozoic bedrock units would be able to support the project's yearly operational demand of 10.5 AFY, but would not support the project's construction and decommissioning demand (i.e., 253 AF each) (Dudek 2024a).

Therefore, the Groundwater Study assumed that water to meet the project's demands for construction and decommissioning (253 AF each) would be from groundwater obtained from Sloughhouse Solar Project wells or the Sacramento County Water Agency (SCWA), or a combination of the two sources (Dudek 2024b, Dudek 2024c, and SWCA 2024). Due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater availability, water demands for construction and decommissioning (253 AF each) were not assumed to be provided by existing on-site groundwater wells. As explained in the Groundwater Study, additional data and analysis would be required to accurately assess the availability of on-site groundwater for construction and decommissioning (Dudek 2024b). Additionally, as discussed in Chapter 9, "Hazards and Hazardous Materials", and the Groundwater Study prepared for the proposed project, the proposed project would not source groundwater from any area subject to restrictions of the EPA and the SWRCB on groundwater applicable to the Aerojet Superfund remediation site and operable units, including groundwater extraction with the 2,000-foot consultation zone (Dudek 2024a).

As described in Chapter 10, "Hydrology and Water Quality," on-site groundwater in older Mesozoic bedrock that could be used to supply the project's 10.5 AFY operational water demand would not result in land subsidence, would not result in adverse effects on groundwater dependent ecosystems, and would not result in substantial depletion of groundwater storage or groundwater level drawdown at nearby wells. Therefore, the project's operational groundwater needs (10.5 AFY over a 35-year period) can be met by on-site groundwater without adverse effects to the sustainable yield of the South American Subbasin or neighboring wells in the Mesozoic bedrock units. Therefore, the project's impact from yearly operational groundwater demands is considered **less than significant**.

Off-site sources of groundwater to meet the project's construction and decommissioning water demands (253 AFY for both construction [18-month period] and decommissioning [12-month period]) have been identified as using imported water via water trucks from the SCWA or Sloughhouse Solar Project wells (Dudek 2024b, Dudek 2024c, SWCA 2024). As indicated in personal communication between Sacramento County and SCWA, SCWA provides water to local contractors for

construction needs through fill stations where the contractor pays for the water. These fill stations are included in SCWA's water supply master plan and supporting groundwater sustainability plan for the groundwater basin and SCWA could provide 253 AFY for both construction and decommissioning for the proposed project (personal communication, SCWA 2024). Additionally, in a memorandum prepared for the proposed project regarding the use of groundwater from the Sloughhouse Solar Project wells, it was concluded that the Sloughhouse Solar Project wells would have adequate yield to supply the required 253 AFY of water for construction and decommissioning activities for the proposed project. As indicated in that memorandum, the per-acre groundwater use is 0.65 AFY per acre within the Cosumnes Subbasin. Under sustainable conditions, assuming the estimated overdraft of 10,000 AFY, the sustainable per-acre groundwater use within the Cosumnes Subbasin would be approximately 0.60 AFY per acre. The 253 AF, one-year extraction is approximately 0.31 AF per acre, about half of the Cosumnes Subbasin per-acre sustainable use (Dudek 2024c).

No new 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 10, "Hydrology and Water Quality," of this EIR for the additional analysis related to water supply.

WASTEWATER FACILITIES

The proposed project may include the construction of permanent restroom facilities. If restroom facilities were installed, an on-site septic system would be required and 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. The proposed project would not require or result in the relocation or construction of new or expanded wastewater collection beyond a small on-site septic system, 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 10, "Hydrology and Water Quality," of this EIR 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 electricity. Permanent electrical service for lighting would be provided by SMUD.

The energy from the solar energy generation and energy storage systems would be transported from the on-site substation to SMUD's 230-kV powerlines. The route of the gen-tie line would extend approximately 1.3 miles from the facility's on-site substation to the western terminus of the gen-tie line where it would interconnect into SMUD facilities (see Plate PD-2 and Plate PD-4 in Chapter 2, "Project Description"). The gen-tie line would use existing dirt and paved access roads where available, but improvements, such as widening or clearing existing dirt roads, and new road sections may be required for construction. These areas would be restored after construction is completed.

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 addressed 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.

   A water supply assessment (WSA) was prepared by Dudek (2024) for the proposed project to determine whether the projected available water supplies would meet the proposed project's water demand. Per the assessment conducted in the WSA, the estimated water demand of the construction and operational phases of the project is insubstantial compared to the proposed groundwater source and the surplus water anticipated by the SCWA. Groundwater supply is buffered from short-term impacts of wet and dry climate cycles, and therefore the project's groundwater supply would remain largely unaffected by the proposed project in normal-year, single-dry-year, and multiple-dry-year conditions over the 20-year projection. The proposed project would require water for use during construction, operations, and decommissioning, as shown in Table SI-4.

Table SI-4: Groundwater Demand for Proposed Solar Facilities

Time Period	Estimated Water Demand
Construction (18 months)	253 AF
Operation and Maintenance (35 years)	10.5 AFY
Decommissioning Phase (12 months)	253 AF
Total Project Water Demand	516.5 AF
Total Solar Facilities Water Demand Amortized Over 20 Years[1]	22.4 AFY
Total Solar Facilities Water Demand Amortized Over 35-Year Project Life	24.5 AFY

Notes:
AF = acre feet; SB = Senate Bill
[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 2024a

As summarized in the Groundwater Study (included as Appendix HYD-1), previous well yield studies included borehole testing in the older Mesozoic bedrocks units at the project site. The results indicated that although initial groundwater level depths were generally shallow (groundwater was obtained relatively near the surface), the drawdowns for the given pumping rates indicated relatively low specific capacities (meaning the well yields were low). The project's annual operational demand of 10.5 AFY equates to approximately 6.6 gallons per minute, and therefore the Groundwater Study concluded that one or more of the sample boreholes that were previously drilled on the project site in the Mesozoic bedrock units would be able to support the project's yearly operational demand of 10.5 AFY, but would not support the project's construction and decommissioning demand (i.e., 253 AF each) (Dudek 2024a).

Therefore, the Groundwater Study assumed that water to meet the project's demands for construction and decommissioning (253 AF each) would be from groundwater obtained from Sloughhouse Solar Project wells or the Sacramento County Water Agency (SCWA), or a combination of the two sources (Dudek 2024b, Dudek 2024c, and SWCA 2024). Due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater availability, water demands for construction and decommissioning (253 AF each) were not assumed to be provided by existing on-site groundwater wells. As explained in the Groundwater Study, additional data and analysis would be required to accurately assess the availability of on-site groundwater for construction and decommissioning (Dudek 2024b). Additionally, as discussed in Chapter 9, "Hazards and Hazardous Materials", and the Groundwater Study prepared for the proposed project, the proposed project would not source groundwater from any area subject to restrictions of the EPA and the SWRCB on groundwater applicable to the Aerojet Superfund remediation site and operable units, including groundwater extraction with the 2,000-foot consultation zone (Dudek 2024a).

The WSA describes that the project proponent would rely on SCWA and/or groundwater imported from the Sloughhouse Solar Project for the construction and

decommissioning phases of the proposed project. A separate memorandum was prepared by Dudek (2024) to evaluate the impacts of extracting 253 AF in a single year from a single Sloughhouse Solar well. Per the memorandum, groundwater well records kept by the Department of Water Resources indicate that the historical Sloughhouse Solar on-site groundwater well yields greater than 1,000 gallons per minute (gpm) and typical yields in excess of 650 gpm throughout the Cosumnes Subbasin, a more than adequate yield for that required to supply the project's construction water demand over 12 months (12 months is a conservative assumption, as construction of the proposed project would occur over 18 months).

The Sloughhouse Solar Project water would be used for the construction and decommissioning phases only, if necessary. Given the results of the WSA, Groundwater Study, and Sloughhouse Solar Project Water Memorandum prepared by Dudek, the analysis is sufficient to demonstrate water availability over the proposed lifetime of the project, as well as the SB 610 mandated 20-year projection. The WSA analysis shows that the above-mentioned sources can supply the project's water demand. Based on the analysis above, the project would have no significant effect on the identified water sources over the project's 35-year life. In addition, the project is consistent with the SGMA and the Basin GSP because the project's water demand would not materially impact the sustainability goals, undesirable results, minimum thresholds, or measurable objectives of the GSP. Hence 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 may include construction of permanent restrooms for use of employees during the project's operational phase. If restroom facilities were installed, an on-site septic system would be required, and the applicant would be required to follow the County Department of Environmental Management's (2021) septic system permitting process and would not tie into an existing wastewater treatment facility. 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 require site preparation and clearing/grading, tree removal, and underground work (trenching) and generation of various construction-period wastes, cardboard, wood pallets, copper wire, scrap metal, common trash, and wood wire spools. In addition, approximately 7,500 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 south of the project site and is a permitted and approved mining operation authorized through California Dept of Conservation, Division of Mine Reclamation.

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

[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, 2023. 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 2022).

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 Demolition Debris Sorting Facilities by Sacramento County (Sacramento County 2024). 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 2024a, 2024b, 2024c).

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 2024c). 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 2024).

Table SI-5 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-5: 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 2024c, 2024d

The proposed project would be required to 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.

CUMULATIVE IMPACTS AND ANALYSIS

INTRODUCTION AND LIST OF CUMULATIVE RELATED 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. 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 analysis of the cumulative effects of the project also takes into consideration the effects of the covered activities described in the South Sacramento Habitat Conservation Plan (SSHCP) EIR. The significance criteria used for this analysis are the same as those used throughout the topical chapters of this document.

The cumulative related projects within a 5-mile radius of the project site that are considered in the cumulative analysis are listed in Table SI-6 below.[4]

[4] In addition to one solar project that is beyond this five-mile distance.

Table SI-6: Cumulative Related Projects

Project No.	Project Name (County Control Number)	Location	Description	Status
Unincorporated Sacramento County				
1	Prairie City State Vehicular Recreation Area Proposed Road and Trail Management Plan (Approximately 3.5 miles away from project site)	South of White Rock Road, between Sunrise Boulevard and Prairie City Road	The Prairie City State Vehicle Recreation Area (SVRA) Road and Trail Management Plan (RTMP) provides a specific and detailed management direction for the off-highway vehicle (OHV) route systems within nine management areas in Prairie City SVRA, guiding their future development, operation and maintenance. Future development under the RTMP would design, construct, and maintain sustainable routes, trails, and related facilities for OHV use consistent with relevant guidelines and regulations. Nonmotorized trails for mountain biking and hiking are also proposed in the RTMP.	IS/MND submitted Aug 2024
2	Cordova Hills (PLNP2008-00142) (Approximately 3.9 miles away from project site)	4715 Grant Line Road, Rancho Cordova, CA 95742	A 2,669-acre urban development area east and adjacent to Rancho Cordova.	Under Construction
3	Grant Line East Mine Use Permit Amendment (PLNP2021-00135 and 95-0658) (Approximately 3 miles away from project site)	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
4	13333 White Rock Road Cell Tower Modification (PLNR2022-00018) (Approximately 2.65 miles away from project site)	13333 White Rock Rd, Rancho Cordova, CA 95742	An Eligible Facilities Request for modifications to an existing wireless facility located at 13333 White Rock Road in the Cosumnes community.	Closed

Project No.	Project Name (County Control Number)	Location	Description	Status
5	White Rock North Mine Project (Approximately 3.8 miles away from project site)	12520 Folsom Blvd, Rancho Cordova, CA 95742	Implementation Permit pursuant to the Aerojet SPA, Reclamation Plan, and Use Permit and Development Agreement for surface mining over a 20-year period on a 2,125-acre portion of the Aerojet campus, located between Folsom Blvd and White Rock Road in the County.	Pre-Application
6	Aerojet Special Planning Area Amendment (Approximately 3 miles away from project site)	13000 White Rock Rd, Rancho Cordova, CA 95742	A Zoning Ordinance Amendment to add an M-1 zoned property to the Aerojet SPA and establish a landfill use for the property.	Pending
7	Oveja Ranch Solar Project (Approximately 8 miles southwest of the project site)	South of Florin Road, northwest of Grant Line Road, and west of Eagles Nest Road	A photovoltaic (PV) solar power and battery storage facility on a 400-acre project site in southern Sacramento County to provide 75 megawatts (MW) of power to the grid. In addition to a PV solar power and battery storage facility, the project would include a generation substation and interconnection lines to the grid. At the end of the project's life (30-35 years), the site would be decommissioned.	Notice of Preparation of an EIR issued and draft environmental impact report under preparation
8	South Sacramento Habitat Conservation Plan (SSHCP)	The SSHCP encompasses a 317,000-acre area in south Sacramento County	The SSHCP encompasses a 317,000-acre area in south Sacramento County and its purpose is to streamline federal and state permitting for development and infrastructure projects while conserving habitat. The Plan includes Clean Water Act permits issued by the Army Corps of Engineers and Endangered Species Act permits issued by the U.S. Fish and Wildlife Service (USFWS). Instead of permitting through several separate state and federal agencies, most actions in the Plan Area can be permitted through the County Office of Planning and Environmental Review.	Approved

Project No.	Project Name (County Control Number)	Location	Description	Status
City of Rancho Cordova				
9	Juniper Creek Energy Storage Project (Approximately 4.5 miles away from project site)	APN 067-0780-011-0000	200-megawatt Battery Energy Storage System (BESS) project	MND submitted 2023, Construction to last 12-months, operational by end of 2025
10	Grant Line Road Safety & Freight Mobility Project (part of Capital SouthEast Connector: D2 Expressway project) (Approximately 3 miles away from project site)	Grant Line Road between Douglas Road and White Rock Road	Reconstruct and widen Grant Line Road from two lanes to four lanes between Douglas Road and White Rock Road and signalize the Raymer Way intersection	Design underway
11	Grantline 208 Elementary School (Approximately 4 miles away from project site)	APN 067-1080-007	Project elements include classroom buildings, kindergarten building, multi-purpose building, library, administration building, hard courts, playgrounds, fields, parking areas, pickup and drop-off areas, and related school signage, crosswalks, and pedestrian improvements.	MND submitted, construction to start March 2025 lasting 1-year.
12	Heritage Falls Specific Plan (Approximately 3.5 miles away from project site)	West of Grant Line Road approximately 0.75 miles south of White Rock Road and approximately 0.80 miles north of Douglas Road within the City of Rancho Cordova	Rezone to change the project site's zoning designation from AG-80 (Agricultural) and IR (Industrial Reserve) to Residential and Public/Open Space designations. The applicant has also requested approval of a tentative subdivision map	IS completed in 2008 No construction yet

Project No.	Project Name (County Control Number)	Location	Description	Status
13	North Douglas II Specific Plan (Approximately 3.5 miles away from project site)	Approximately 0.8 miles north of Douglas Road and 0.6 miles west of Grant Line Road	The proposed project involves a rezone, tentative subdivision map, special development permit, design review, and development agreement. The site consists of approximately 41.5 acres which would be rezoned from AG-80 (Agricultural) to 15.8 acres of RD-10 (low density residential) and 25.7 acres of O (Open Space). The tentative subdivision map would create 153 single family homes, pedestrian paseos, a neighborhood park, open space, and a wetland preserve.	MND completed in 2006. No construction yet.
14	Sun Creek Specific Plan (Approximately 4.8 miles away from project site)	Located in southern Rancho Cordova	Development of approximately 1,264 acres. Sunrise Boulevard bounds the Plan Area on the west and Grantline Road bounds it on the east. The future extension of Chrysanthy Boulevard will form the north boundary of the eastern most portion of the plan, and Kiefer Boulevard runs east to west through the Plan Area.	Approved
15	Sunridge Specific Plan (Approximately 4.8 miles away from project site)	Located in southern Rancho Cordova	2,606 acres south of Douglas Road, east of Sunrise Boulevard, and north of Grantline Road	Completed
16	Westborough at Easton Specific Plan (Approximately 5 miles west of the project site)	Approximately 1,550 acres of land area along the eastern edge of Rancho Cordova, and south of the American River, Highway 50, Folsom Boulevard, and the Folsom South Canal	The Specific Plan proposes 7,130 residential units, approximately 340 acres of commercial uses, three schools, approximately 83 acres of parks, approximately 17 acres of neighborhood green space, approximately 260 acres of open space, and approximately 57 acres of preserve land for sensitive biological species.	Notice of Preparation of an EIR issued and draft environmental impact report under preparation
City of Folsom				
17	Folsom Plan Area Specific Plan (Approximately 4.9 miles away from project site)	Located in southern Folsom	Mixed use development in the approximately 3,500-acre Folsom South of U.S. 50 Specific Plan area	Under Construction

Sources:
City of Rancho Cordova (https://www.cityofranchocordova.org/departments/community-development/planning/planning-division-document-library)
City of Folsom (https://www.folsom.ca.us/government/community-development/planning-services/folsom-plan-area)
CEQAnet (https://ceqanet.opr.ca.gov/)

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 is substantial or exceeds 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

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 with the exception of the implementation. None of the projects considered in this cumulative analysis would introduce any features that would be prominently visible from 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 the Prairie City State Vehicular Recreation Area and motor vehicle headlights on Scott Road. New nighttime lighting associated with the related cumulative projects is distant from the project site and any nighttime glare associated with the related cumulative

projects would not be visible from the project site. New nighttime lighting associated with some of the related projects considered in this cumulative analysis would contribute to a regional decrease in the ability to view the night sky (skyglow effects). Therefore, the related projects would result in a significant cumulative 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. 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. 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 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. However, for a cumulative impact to occur, nighttime lighting associated with related cumulative projects 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 related cumulative projects propose features that would be visible from the project site. 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). A glare analysis performed for the project found that the proposed PV arrays at the project site would not result in hazardous glare. Dudek performed a glare analysis for the proposed project (Dudek 2023) and as described in Chapter 3, "Aesthetics," the modeling results demonstrated that the proposed solar panels would not result in hazardous glare (i.e., the potential for after-images in human vision) from any of the proposed solar panel arrays at any of the modeled receptors. The related cumulative projects listed in Table SI-6 would not create substantial sources of glare and therefore there is **no significant cumulative glare impact**.

Agricultural Resources

The proposed project would not conflict with, and no impact would occur to the following agricultural resources 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 indirectly result in the conversion of agricultural land to non-agricultural use. Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-6 above to result in a significant physical environmental impact related to these topics. Thus, there would be **no cumulative impact** related to these agricultural resources topics.

As discussed in Chapter 4, "Agricultural Resources", there are approximately 1,412 acres of existing livestock (sheep and cattle) grazing land that would be used for new solar generating facilities at the proposed project site. Sacramento County 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 based on Sacramento County General Plan Policy AG-5. The applicant would be required to implement Mitigation Measure AG-1 (Implement the Agricultural Management Plan) which would reduce project-related impacts related to the conversion of agricultural resources to non-agricultural use since it 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. Additionally, after decommissioning of the proposed project is complete, the site would be required to be restored to agricultural land in accordance with Sacramento County's decommissioning requirements. 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 related cumulative projects 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, which would reduce the significant cumulative impact. With implementation of Mitigation Measure AG-1, the proposed project result in a **less-than-cumulatively-considerable contribution** to cumulative impacts related to the conversion of agricultural land to non-agricultural use.

Air Quality

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 2021). 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 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 construction and decommissioning activities would result in NO_X and PM_{10} emissions that would exceed SMAQMD-recommended threshold of significance for NO_X and the non-zero threshold for PM_{10}. 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 Off-Road Equipment Exhaust-Related Emissions during Construction and Decommissioning), AQ-2c (Submit Construction and Decommissioning Emissions Control Plans), AQ-2d (Off-site Construction and Decommissioning Mitigation), and AQ-2e (Implement Best Management Practices for Reducing Operational PM Emissions) would reduce construction- and decommissioning-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- and decommissioning-related emissions would be reduced to a level below the thresholds of significance and the proposed project's contribution to the significant cumulative impact would **be less than cumulatively considerable**.

As described in Chapter 5, operation of the proposed project would generate PM emissions that would exceed SMAQMD's zero threshold for PM emissions; therefore, implementation of Mitigation Measure AQ-2e (Implement Best Management Practices for Reducing Operational PM Emissions) would be required in order to use the SMAQMD non-zero thresholds of significance for operational PM emissions. With implementation of Mitigation Measure AQ-2e, the proposed project's operational PM emissions would not exceed the applicable PM project-level thresholds and would **be less than cumulatively considerable**.

Based on CGS Special Publication 192 and the SMAQMD's applicability map, portions of the project site likely contain NOA and have already been delineated by SMAQMD as parcels that are subject to CARB's ATCM for Construction, Grading, Quarrying and Surface Mining Operations (see Plate AQ-1), unless it is demonstrated by a geotechnical report that NOA is not present. Other areas of the project site (shown in orange on Plate AQ-1) may also contain NOA, and if so, would also be subject to the ATCM. As shown on Plate AQ-1, areas surrounding the project site, including where some of the cumulative projects listed in Table SI-6 may also be located, would be in areas subject to CARB's ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. The proposed project would implement Mitigation Measure AQ-3a (Site Investigation for Potential Naturally Occurring Asbestos) and cumulative projects in the area would be required to implement similar mitigation measures to be in compliance with CARB's ATCM. Implementation of Mitigation Measure AQ-3a (and similar measures) would reduce human health hazards associated with generation of fugitive dust that potentially contains NOA. If the site investigation determines that NOA is present on the project site, then implementation of a District-approved dust mitigation plan would reduce the impact from human health hazards related to generation of airborne NOA during construction or decommissioning. Cumulative projects that are located in areas that contain NOA would also be subject to similar measures required by CARB's ATCM. Therefore, the proposed project would result in a **less-than-cumulatively-considerable contribution** to any cumulative impact related to airborne asbestos.

Biological Resources

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. For species and resources for which modeled suitable habitat data are available from the SSHCP, a "regional project analysis area" consisting of the northeastern portion of the SSHCP Plan Area (i.e., Preserve Planning Units 1 and 5 and the portion of the SSHCP Plan Area in between) was used to evaluate the impact context for biological resources (see Chapter 6, "Biological Resources," of this EIR for more detail). The Preserve Planning Units are spatially representative of regional biological resources, with each Preserve Planning Unit capturing specific habitats and areas of importance for a suite of species characteristic of that portion of the SSHCP Plan Area.

The following rare plants were observed during project surveys in 2023 and 2024 within and near the solar development area that could be affected by project activities: spiked western rosinweed, Ahart's dwarf rush, and pincushion navarretia. Implementation of grazing regimes or other vegetation management actions as part of the Agricultural Management Plan (see Mitigation Measure AG-1), if incompatible with the life cycle of spiked western rosinweed, could reduce the long-term persistence of this species on the site. The proposed project would impact approximately 11 percent of documented occurrences across its currently known range, this would be considered a potentially significant impact. However, Mitigation Measure BR-1b (Avoid, Minimize, and Mitigate for Impacts on Special-Status Plants) would avoid, minimize, and mitigate impacts on special-status plants, ensuring a **less-than-cumulatively considerable contribution** to the cumulative impact on rare plants of past, present, and future development.

The proposed project would impact upland and aquatic habitat for Western Spadefoot, including approximately 289 acres (1.19 percent) of impacts within the Mather Core Recovery Area. Implementation of Mitigation Measure BR-1c (Avoid, Minimize, and Mitigate for Impacts on Western Spadefoot) would avoid, minimize, and mitigate for impacts to this species, and the project would have a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

The proposed project's temporary and permanent impacts from the proposed project represent less than 1 percent of suitable aquatic habitat (981 acres) and approximately 3 percent of suitable upland habitat (42,743 acres) for Northwestern Pond Turtle in the regional project analysis area, and implementation of BR-1d (Avoid, Minimize, and Mitigate for Impacts on Northwestern Pond Turtle) would avoid, minimize, and mitigate any impact to individuals, ensuring a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

The proposed project would remove approximately 1,064 acres of suitable nesting/foraging habitat for burrowing owl, which represents approximately 2 percent of suitable habitat (59,433 acres) for this species in the regional project analysis area. Implementation of BR-1e (Avoid, Minimize, and Mitigate for Impacts on Western

Burrowing Owl and Occupied Nesting Habitat) would avoid, minimize, and mitigate for impacts to this species, and the project would have a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

The proposed project would result in approximately 911 acres of permanent loss of foraging habitat for Swainson's hawk (Table BR-10), representing 2 percent of 57,088 acres of foraging habitat potentially available to this species in the regional project analysis area. 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 and Mitigation Measure BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat) would further avoid impacts to individuals, ensuring that the proposed project would have a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

The proposed project could impact tricolored blackbird through the temporary or permanent removal of habitat and while implementation of the Agricultural Management Plan would preclude re-establishment of the small amount of nesting habitat impacted in the solar development area, it would restore areas of temporary impact to grasslands that would be expected to retain foraging habitat value for this species throughout operations. However, Mitigation Measures AG-1 (Implement the Agricultural Management Plan), BR-1a (Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife), and BR-1g (Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird) would mitigate impacts to habitat and avoid, minimize, and mitigate for impacts on tricolored blackbird, and would ensure a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

Valley elderberry longhorn beetle has not been previously documented within the project site. However, five occurrences have been recorded within five miles, and there are elderberry shrubs suitable for inhabitation that could be indirectly impacted by the proposed project. Mitigation Measures BR-1a (Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife) and BR-1h (Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle and Their Habitat) would avoid disturbance to habitat and ensure a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

The proposed project would impact approximately 8.59 acres of vernal pool and other seasonally inundated habitats that provide potentially suitable habitat for special-status aquatic invertebrates. Implementation of Mitigation Measures BR-1i (Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp) and BR-3 (Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan) would compensate for the potential loss of aquatic habitats that cannot be avoided, ensuring a

less-than-cumulatively considerable contribution to the cumulative impact of past, present, and future development.

Though it has not been documented within the solar development area, the proposed project could impact American badger if the species is denning in or near the construction footprint during ground disturbance and the project would impact potential habitat (i.e., annual grassland, blue oak woodland) within the solar development area. However, implementation of Mitigation Measures BR-1a (Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife) and BR-1j (Avoid, Minimize, and Mitigate for Impacts on American Badger) would avoid, minimize, and mitigate for impacts on American badger and ensure a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

The proposed project would impact potential grassland nesting habitat for migratory bird species, such as northern harrier and grasshopper sparrow, as well as oak woodland/forest and riparian supporting trees suitable for several raptor species. The loss of potential foraging habitat for grassland- and woodland/riparian-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 [Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat]) and Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities), which requires tree preservation and establishment, would ensure a **less-than-cumulatively considerable contribution** to any cumulative impact because mitigation in this EIR requires preservation of grassland habitat elsewhere in the county and tree and canopy preservation and replanting. Mitigation Measure BR-1k (Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds) would further reduce project impacts on nesting raptors and migratory birds.

Though no active bat roosts or signs of occupation were detected during surveys, the proposed project would impact isolated trees (and snags) near seasonal ponds or other aquatic habitat that provide nearby foraging opportunities for native bats. There could be direct impacts if bats are in or adjacent to the solar development area during site preparation or construction. Impacts to habitat would be minor and Mitigation Measures BR-1a (Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife) and BR-1l (Avoid, Minimize, and Mitigate for Impacts on Bats) would ensure a **less-than-cumulatively considerable contribution** to any cumulative impact of past, present, and future development.

Though Crotch's bumble bee has not been documented within the solar development area, the proposed project would impact a total of 462 potential nesting locations (e.g., existing burrows, down woody debris, tree cavities, etc.) and numerous suitable floral resources were identified throughout the solar development area and vicinity during focused surveys. Though the loss of grassland and woodland vegetation could reduce available floral food resources for this species, Mitigation Measure AG-1 (Implement the

Agricultural Management Plan) would incorporate pollinator plants into the seed mix that could benefit this species, Mitigation Measure BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat) requires preservation of grassland habitat, and BR-1m (Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee) would avoid, minimize, and mitigate for impacts on Crotch's bumble bee, ensuring a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

As detailed under Impact BR-2 in Chapter 6 of this EIR, "Biological Resources," the project would combine with other past, present, and future projects to impact sensitive natural communities, including vernal pools, waters of the U.S. and of the State, grassland bird habitat, riparian habitat, valley needlegrass grassland, and oak woodlands. A very small amount of vernal pools and wetlands and other waters would be permanently impacted, but Mitigation Measure BR-3 (Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan) would avoid, minimize and compensate for potential impacts, ensuring a less-than-cumulatively considerable contribution to the cumulative impact of past, present, and future development. The proposed project would also impact annual grassland and associated open habitats, but these habitats would be restored upon completion of project construction as a result of required implementation of the Agricultural Management Plan (see Mitigation Measure AG-1 in Chapter 4, "Agricultural Resources") and compliance with the County of Sacramento Swainson's Hawk Mitigation Program (see Mitigation Measure BR-1f [Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and Their Nesting and Foraging Habitat]) would require preservation of grassland habitat elsewhere in the County, ensuring a less-than-cumulatively considerable contribution to the cumulative impact of past, present, and future development. The proposed project would largely avoid impacts to riparian habitat within the project site except for approximately four acres where roads and medium voltage overhead lines would cross these creeks or associated intermittent tributaries, and several locations where solar field developments (and adjacent temporary work areas) extend into the edge of riparian zones. Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities), which requires tree preservation and establishment, would ensure a **less-than-cumulatively considerable contribution** to cumulative impacts to riparian trees by requiring avoidance, preservation of oak woodland canopy at a 1:1 ratio, and replanting.

The project would result in the permanent loss of approximately 287 acres of oak woodland/forest land cover and the associated removal of up to 4,787 trees, representing a loss of 54.61 acres of oak canopy area from the solar development area. Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities) includes a requirement to implement oak woodland and native tree mitigation. This mitigation would avoid impacts to native trees retained within and adjacent to the solar development area, preserve oak woodland canopy at a 1:1 ratio, and establish plantings of native trees at a 1:1 tree replacement ratio. The Sacramento County General Plan Update Final EIR (Sacramento County 2011) recognized that even with implementation of projects consistent with General Plan policies such as CO-140,

the significant impacts on native trees and tree canopy could be reduced, but not to a less-than-significant level at the scale of the County, because there would still be a substantial temporal loss of trees/tree canopy in the intervening years between when the seedlings are planted and when they mature to a condition that fully replaces the mature trees lost. So, while the project's proposed mitigation would be sufficient to reduce the project-level impact to less than significant, the temporal loss of oak species prior to replacement contributes to the ongoing regional and statewide loss of oak woodlands. This temporal loss is a significant cumulative impact, and the temporal loss of 54.61 acres of oak canopy area is **cumulatively considerable**. There is no feasible mitigation available. This impact is **significant and unavoidable**.

The proposed project would impact grasslands in the solar development area that provide nursery and migratory habitat for common wildlife species. However, implementation of the Agricultural Management Plan (see Mitigation Measure AG-1) would re-establish grassland conditions in and around the solar panels within the solar development area and 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 Nesting and Foraging Habitat), and BR-3 (Avoid, Minimize, Restore, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters, including Riparian Habitat, through the Development and Implementation of an Aquatic Resources Mitigation Plan) would require compensation that would minimize local and regional habitat losses and maintain habitat for connectivity, ensuring a less-than-cumulatively considerable contribution to the cumulative impact of past, present, and future development. Though Coyote Creek and Carson Creek corridor provide habitat movement corridors, the project has been designed to avoid development along the two main creek corridors and the functions along the Coyote/Carson Creek habitat connectivity area would be maintained, ensuring a **less-than-cumulatively considerable contribution** to the cumulative impact of past, present, and future development.

Climate Change

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 7,320 MT CO_2e over the 18-month construction period and would exceed the SMAQMD construction-related threshold of 1,100 MT CO_2e per year. Decommissioning activities would generate approximately 1,853 MT CO_2e over the one-year decommissioning period and would also exceed the SMAQMD threshold of 1,100 MT CO_2e per year. It is also estimated that carbon sequestration capacity would be lost by the removal of trees during project construction (Dudek 2025). However, as discussed in Chapter 7, "Climate Change", a portion of the carbon sequestration capacity of the project site would be restored by new tree planting.

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, reduce GHG emissions associated with SMUD's power generation, and assist in achieving SMUD's 2030 Net Zero Carbon Plan goal and State RPS requirements. 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 2025 calendar year, the proposed project would provide a potential offset of up to 69,798 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.

CULTURAL AND PALEONTOLOGICAL RESOURCES

There are no unique geologic features within or adjacent to the project site. Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-6 above, to result in a significant physical environmental impact related to unique geologic features. Thus, there would be **no cumulative impact** related to these cultural and paleontological resources topics.

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-2a (Cultural Resource Management Plan [CRMP]), CR-2b (Construction Monitoring), and CR-2c (Walltown Mining District Historic Study and Interpretive Plan) would be required. Further, implementation of Mitigation Measure CR-

3a (Treatment of Human Remains) would be required to reduce impacts to unanticipated human remains in the event of accidental discovery during project implementation. These mitigation measures would ensure that the project applicant documents and preserves cultural resources, or human remains, 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 or human remains. 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 or unanticipated discovery of human remains.

Fossil discoveries resulting from excavation and earth-moving activities associated with development have and will continue to occur 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 Pliocene–Miocene age Mehrten Formation, the Eocene age Ione Formation, and the Upper Cretaceous age Chico 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-6 could result in a significant cumulative impact. Construction of the proposed project would result in earthmoving activities in the paleontologically sensitive Mehrten, Ione, and Chico Formations. Implementation of Mitigation Measure CR-4 (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.

Energy

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.

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, and from a renewables source, 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 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**.

Geology, Seismicity, and Soils

The project site is situated primarily in the rolling foothills along the west side of the Sierra Nevada; the northwest corner of the project site is situated at the eastern margin of the Sacramento Valley (Gutierrez 2011); this area historically has not been seismically active. The project site is situated on rolling land and with elevations that range from 170 to 275 feet above mean sea level. However, the finished grades would generally follow existing grades (Terracon 2021). 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 2021) 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 and shallow depth to bedrock. For the same reason, Terracon (2021) concluded that lateral spreading is also 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. It also requires that measures to reduce damage from seismic effects and expansive soils be incorporated in structural design. Since the cumulative related projects are required to implement applicable portions of the CBC, this would serve to reduce any potential cumulative impact. The project's compliance with applicable building code requirements would ensure a **less-than-cumulatively-considerable contribution** to any cumulative 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. Since the cumulative related projects are required a SWPPP and comply with grading permit conditions, this would serve to reduce any potential cumulative impact. The proposed project would implement relevant existing requirements and standards, and as a result, would have a **less-than-cumulatively-considerable contribution** to any cumulative impact related to soil erosion.

Hazards and Hazardous Materials

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 other than the Aerojet contaminated groundwater plume and the White Rock Dump North (Dudek 2024a). 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. Further, there are no schools within 0.25 miles of the project site. As discussed in Chapter 9, "Hazards and Hazardous Materials," under "BESS-related Fire Hazards", there have been recent incidents of large fires that have occurred at battery energy storage systems in California and other states due to inadequate safety protocols. SB 38 requires every

battery energy storage facility in California to have an emergency response and emergency action plan that covers the premises of the facility. Additionally, the project would incorporate additional safety standards and regulations as described above in the "Additional BESS-related Safety Standards Section" and implement Mitigation Measure HAZ-1 (Prepare an Emergency Response and Emergency Action Plan), which would reduce the impact from potential hazards associated with the proposed battery storage system. Thus, there would be a **less-than-cumulatively-considerable contribution** related to any cumulative impacts related to routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials.

As shown in Plate HAZ-1 (Aerojet Superfund Site and Operable Units), there is a large area near the project site that overlies the contaminated areas associated with the Aerojet Superfund Site. Aerojet is conducting ongoing groundwater remediation activities in the project area via groundwater extraction and treatment (GET) wells, and also operates groundwater monitoring wells, with oversight from the Central Valley RWQCB and USEPA. An existing GET well is situated in the immediate vicinity of the proposed access road from the proposed switchyard to the existing SVRA access road (which would also provide access to the project site; additional project-related improvements are proposed along the road, including installation of electrical towers). Additional GET wells and monitoring wells are situated in the vicinity of the proposed substation, BESS, and solar panels to the north. Another GET well and adjacent monitoring well are located adjacent to a small spring in the central portion of the project site. Furthermore, construction of the western end of the proposed access road at Grant Line Road would occur approximately 400 feet from a Cortese-listed site (the White Rock Dump North), which also includes a contaminated groundwater plume. Project-related facilities and facilities that would be required for cumulative projects in the area have the potential to interfere with remediation activities by damaging or destroying existing remediation and/or monitoring wells during the construction process, and during project operation if proposed facilities are not properly sited. Similar to the proposed project, cumulative projects listed above in Table SI-6 would require mitigation measures similar to Mitigation Measures HAZ-2a (Prohibit New Groundwater Wells and Use of Existing Groundwater Wells Within the Contaminant Plume Consultation Zone), HAZ-2b (Prepare and Implement a Health and Safety Plan), and HAZ-2c (Coordinate with Aerojet to Close, Relocate, or Avoid Monitoring Wells) to reduce any potential impacts related to the Aerojet Superfund Site. The implementation of these mitigation measures for the proposed project and similar conditions for other projects within the area that may include contaminated groundwater plumes would reduce the impacts related to construction in a Cortese-listed site. Therefore, the proposed project would result in a **less-than-cumulatively-considerable contribution** to any cumulative impact related to construction in a Cortese-listed site.

As discussed above under Cumulative Impacts related to Air Quality, based on CGS Special Publication 192 and the SMAQMD's applicability map, portions of the project site likely contain NOA and have already been delineated by SMAQMD as parcels that are subject to CARB's ATCM for Construction, Grading, Quarrying and Surface Mining Operations (see Plate HAZ-3), unless it is demonstrated by a geotechnical report that NOA is not present. Other areas of the project site (shown in orange on Plate HAZ-3) may

also contain NOA, and if so, would also be subject to the ATCM. As shown on Plate HAZ-3, areas surrounding the project site, including where some of the cumulative projects listed in Table SI-6 may also be located, would be in areas subject to CARB's ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. The proposed project would implement Mitigation Measure AQ-3a (Site Investigation for Potential Naturally Occurring Asbestos) and cumulative projects in the area would be required to implement similar mitigation measures to be in compliance with CARB's ATCM. Implementation of Mitigation Measure AQ-3a (and similar measures) would reduce human health hazards associated with generation of fugitive dust that potentially contains NOA. If the site investigation determines that NOA is present on the project site, then implementation of a District-approved dust mitigation plan would reduce the impact from human health hazards related to generation of airborne NOA during construction or decommissioning. Cumulative projects that are located in areas that contain NOA would also be subject to similar measures required by CARB's ATCM. Therefore, the proposed project would result in a **less-than-cumulatively-considerable contribution** to any cumulative impact related to airborne asbestos.

Three of the related projects considered in this cumulative analysis (Riverview Subdivision Map Extension, Rancho Murieta North, and Sloughhouse Solar Facility Project) 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 6.3 miles from the nearest Mather Airport runways and within the Mather Airport Influence Area, Review Area 2. The proposed switchyard and gen-tie route would be immediately adjacent to, but outside of, the Mather Airport's 14 CFR Part 77 Airspace Protection Surfaces boundary. The proposed substation would be approximately 0.75 mile southeast of the Airspace Protection Surfaces boundary. Therefore, the proposed project components would not represent a violation of CFR Part 77 Subpart B imaginary airspace surfaces associated with Mather Airport. Further, implementation of the proposed project would not result in an aircraft safety hazard or a safety hazard for people residing or working in the project area as related to Mather Airport. Therefore, the proposed project would result in a **less-than-cumulatively-considerable contribution** to any cumulative impact related to aircraft safety hazards for Mather Airport. The project site is approximately 4.5 miles north of the Rancho Murieta Airport. The tall facilities at the proposed on-site substation, gen-tie route, and switchyard would be approximately 7.5 miles north of the Rancho Murieta Airport. Therefore, the proposed project would have **no cumulative impact** related to Rancho Murieta Airport.

All projects in Sacramento County, including those listed in Table SI-6, would be required to obtain written authorization from the Sacramento County Department of Transportation for construction of roadway improvements where lane closures would be required, including encroachment permits. The Right of Way Management Section acts as the lead agency in the review process and is responsible for the coordination and management of

the review process. Traffic Control Plans and/or Detour Plans are reviewed and managed by the Right of Way Management Section and are required for all construction work within the road right of way which modifies vehicular, bicycle, and/or pedestrian traffic patterns. Similar to the proposed project, related cumulative projects that would require an encroachment permit, include roadway improvements, or lane closures would be subject to the Sacramento County Department of Transportation regulations and design standards, and would be required to apply for applicable permits with permit conditions that would reduce any impacts related to emergency response or evacuation plans. Traffic Control Plans for project-related construction of the access roads planned as part of the proposed project would be prepared and implemented by the applicant and reviewed and approved by the County to ensure the safe and efficient movement of traffic and emergency vehicles through construction work zones. Therefore, the proposed project would result in a **less-than-cumulatively-considerable contribution** to cumulatively significant impacts related to impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan.

HYDROLOGY AND WATER QUALITY

CONSTRUCTION-RELATED DEGRADATION OF WATER QUALITY OR INTERFERENCE WITH IMPLEMENTATION OF THE BASIN PLAN

Water quality in the vicinity of the project site 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. Construction activities associated with the proposed project and the related cumulative projects would create the potential for soil erosion and sedimentation of drainage systems, both within and downstream of the project site and related cumulative project sites. The construction process may also result in accidental release of pollutants to Carson Creek or Little Deer Creek. However, as noted above under “Hazards and Hazardous Materials,” all hazardous substances 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. 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 10, “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, which would reduce the potential for a cumulative impact. Adherence to existing requirements would ensure that the proposed project would result in a **less-than-cumulatively-considerable** contribution to any cumulative impact related 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

Development of the project site and development of the related cumulative project sites could change the long-term potential for contaminant discharges because new impervious surfaces would be created, and thus there would be a potential for increased long-term discharges of urban contaminants (e.g., oil and grease, fuel, trash, pesticides, fertilizers). As detailed in Chapter 10 of this EIR, "Hydrology and Water Quality," the proposed project would be required to implement a variety of strategies and practices – both during construction and during operation of the proposed project – that would protect water quality. Long-term water quality impacts from project operation must be reduced using site design and source control measures to help keep pollutants out of stormwater as required by the State Water Resources Control Board. In addition, the proposed project would be required to implement best management practices for stormwater consistent with the California Stormwater Quality Association Industrial/Commercial Best Management Practices Handbook or its equivalent, including annual reporting of any structural control measures and treatment systems. These project design features are requirements of regulatory permits and would also be made enforceable through County conditions of approval and would protect water quality as required by the Basin Plan. Implementation of the related projects considered in this cumulative analysis would be required to meet similar requirements, including compliance with the Sacramento Areawide NPDES Municipal Separate Storm Sewer System (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, which would reduce cumulative impacts. Implementation of applicable design requirements, best management practices, and permit conditions would ensure that the proposed project would result in a **less-than-cumulatively-considerable contribution** to any cumulative impact related to degradation of water quality or interference with implementation of the Basin Plan.

EXCEEDANCE OF DRAINAGE SYSTEMS RESULTING IN HYDROMODIFICATION OR FLOODING

The proposed project would add a minor amount of impervious surfaces and the related cumulative projects would add impervious surfaces that can increase runoff volumes and dry weather flows, increase the frequency and number of stormwater runoff events, and increase 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. There is no existing stormwater drainage system at the project site. The project applicant has commissioned a drainage study (called a "Level 3 Drainage Study") to evaluate impacts of stormwater runoff relative to the existing drainage patterns and floodplains. As shown in the drainage study, construction of the proposed project would not alter the existing drainage patterns and under a 100-year storm would either not increase flow rates or would result in only a minor increase. The drainage study also

included hydraulic modeling for the areas where solar panels and the associated access roads would be installed, with a focus on five of the proposed road crossings of creeks, finding that culvert crossings would allow for proposed drainage patterns to be consistent with existing conditions. Proposed development would not encroach on the existing 100-year floodplains along affected creeks or on the any FEMA floodplain. Mitigation Measure HYD-3 requires Level 4 drainage study that also addresses the proposed switchyard. County requirements and similar city requirements would apply to the related cumulative projects and would reduce cumulative impacts related to the alteration of drainage patterns, increased erosion, exceeding storm drainage system capacity, degrading water quality, increased flooding, or changes in flood flows. Compliance with existing County standards and implementation of Mitigation Measure HYD-3 would ensure that the proposed project would have a **less-than-cumulatively-considerable contribution** to cumulative impacts associated with exceedance of stormwater drainage systems, hydromodification, and flooding.

GROUNDWATER SUSTAINABILITY

As required by the Sustainable Groundwater Management Act (SGMA), groundwater sustainability plans (GSPs) have been prepared and were submitted to DWR and as detailed in Chapter 10 of this EIR, "Hydrology and Water Quality," with the limited yearly operational groundwater demands and the small amount of new impervious surfaces added, the proposed project would not conflict with the South American Groundwater Subbasin Groundwater Sustainability Plan. The related cumulative projects would be subjected to a similar evaluation relative to the applicable groundwater sustainability plan, thereby reducing any cumulative impact. The proposed project would result in a less-than-cumulatively-considerable contribution to cumulative impacts associated with groundwater sustainability.

LAND USE

The proposed project would not physically divide an established community. Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-6 above to result in a significant physical environmental impact related to this topic. Thus, there would be **no cumulative impact** related to this land use topic.

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-80 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-80 zoning designation to ensure compatibility of the proposed project with surrounding uses and zoning (Sacramento County 2023). 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. The proposed project would have **no cumulative contribution** to any significant cumulative impact related to land use policy consistency. 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.

Noise

When evaluating cumulative noise and vibration impacts, 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.

The proposed project would not expose people to excessive noise levels from an airport or private airstrip. The project site is not within the boundaries of the Mather Airport Land Use Compatibility Plan or associated noise contours, or in an area exposed to excessive aircraft-generated noise levels (e.g., not within the 60 dB L_{dn}/CNEL contour of any airport). Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-6 above to result in a significant physical environmental impact related to excessive noise from an airport. Thus, there would be **no cumulative impact** related to this noise topic.

As discussed in Chapter 12, “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 adjacent to one another and expose sensitive receptors to significant noise levels at the same time. Noise-sensitive land uses in the vicinity of the project site include the residential property at 3850 Scott Road in the central part of the project site. With the implementation of Mitigation Measures NOI-1a (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) and NOI-1b (Prepare and Implement a Blasting Plan), impacts from temporary exposure of sensitive receptors to nighttime noise and blasting noise would be reduced. Additionally, the implementation of Mitigation Measures NOI-2a (Implement Vibration Control Measures) and NOI-2b (Additional Vibration Controls for Blasting to Avoid Human Annoyance) would require additional measures to reduce the impacts to on-site residential receptors to levels below the human annoyance vibration thresholds. Additionally, by including the option to offer the option of temporary relocation for the residents 3850 Scott Road within the project site for the duration of blasting activities within 0.5 miles of this receptor, short-term exposure of sensitive receptors to construction vibration (annoyance) would be reduced. Because the closest sensitive uses are approximately 50 feet of the project site on Scott Road, and there are no other projects

within 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 have **no 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. The related cumulative projects would 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. This is a significant cumulative impact. Generally, when traffic volumes increase by 100 percent, a 3-dB increase in traffic noise can be expected in the area. The number of workers expected on-site during the construction of the project would vary over the 18-month construction period and would likely average 476 construction workers (952 total trips per day) during the peak construction phase, Photovoltaic (PV) System Installation. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 4 to 954 trips during the 10-month site preparation phase, averaging approximately 20 daily trips including the 16 daily vendor truck trips. These number of trips added to existing traffic volumes along the existing nearby roadways would result in a noise increase of up to 2 dB at the nearest noise-sensitive uses from Scott Road centerlines. This level of noise increase is not considered perceptible. Therefore, project-related construction traffic would **have a less-than-cumulatively considerable contribution** to any cumulative temporary transportation noise impact.

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 would have no perceivable impact to daily noise levels. One to four times per year, panel washing would occur for up to two weeks. This activity would involve limited equipment and approximately 10 staff and an additional 32 trips per day were also included to account for water being trucked in for panel washing and sheep/goat grazing activity. The limited number of daily trips would not appreciably increase traffic volumes and impact the local or regional circulation system. Therefore, project-related operational traffic would **have a less-than-cumulatively considerable contribution** to any cumulative transportation noise impact.

Utilities and Service Systems

Wastewater and Stormwater

The proposed project may include the construction of permanent restroom facilities. If restroom facilities were installed, an on-site septic system would be required and 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, implementation of the related projects considered in this cumulative analysis, if they would require permanent wastewater service, would result in

a cumulatively less-than-significant impact, and the proposed project would result in a **less-than-cumulatively-considerable contribution** to cumulative wastewater impacts.

As discussed in detail in Chapter 10, "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, which would reduce cumulative impacts. The proposed project would result in a **less-than-cumulatively-considerable contribution** to cumulative 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 water supply assessments for large developments, as defined in this legislation. 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-4, the proposed solar facilities would require a total of 516.5 AF of groundwater over the projected 35-year project life. Averaged over the 35-year project life, the proposed solar facilities would require approximately 10.5 AFY of groundwater during operations, which would be served by existing on-site groundwater wells and/or from Sacramento County Water Agency sources.

As discussed in the "Utilities and Service Systems" Section above, the Groundwater Study explains that the results of previous well yield studies within the project site indicated that although initial groundwater level depths were generally shallow (groundwater was obtained relatively near the surface), the drawdowns for the given pumping rates indicated relatively low specific capacities (meaning the well yields were low). The project's annual operational demand of 10.5 AFY equates to approximately 6.6 gallons per minute, and therefore the Groundwater Study concluded that one or more of the sample boreholes that were previously drilled on the project site in the Mesozoic bedrock units would be able to support the project's yearly operational demand, but would not support the project's construction and decommissioning demand (i.e., 253 AF each) (Dudek 2024a).

Therefore, the Groundwater Study assumed that water to meet the project's demands for construction and decommissioning (253 AF each) would be from groundwater obtained from Sloughhouse Solar Project wells or the Sacramento County Water Agency (SCWA), or a combination of the two sources (Dudek 2024b, Dudek 2024c, and SWCA 2024). Due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater

availability, water demands for construction and decommissioning (253 AF each) were not assumed to be provided by existing on-site groundwater wells. As explained in the Groundwater Study, additional data and analysis would be required to accurately assess the availability of on-site groundwater for construction and decommissioning (Dudek 2024b). Additionally, as discussed in Chapter 9, “Hazards and Hazardous Materials”, and the Groundwater Study prepared for the proposed project, the proposed project would not source groundwater from any area subject to restrictions of the EPA and the SWRCB on groundwater applicable to the Aerojet Superfund remediation site and operable units, including groundwater extraction with the 2,000-foot consultation zone (Dudek 2024a).

Additionally, as described in the proposed project’s Water Supply Assessment and Groundwater Study, due to data gaps regarding on-site hydrogeology and the potential lack of on-site groundwater availability, water demands for construction and decommissioning (253 AF each) were not assumed to be provided by existing on-site groundwater wells. The proposed project would instead rely on groundwater obtained from Sloughhouse Solar Project wells or the Sacramento County Water Agency (SCWA), or a combination of the two sources.

As described in Chapter 10, “Hydrology and Water Quality,” on-site groundwater in older Mesozoic bedrock that could be used to supply the project’s 10.5 AFY operational water demand would not result in land subsidence, would not result in adverse effects on groundwater dependent ecosystems, and would not result in substantial depletion of groundwater storage or groundwater level drawdown at nearby wells. Therefore, the project’s operational groundwater needs (10.5 AFY over a 35-year period) can be met by on-site groundwater without adverse effects to the sustainable yield of the South American Subbasin or neighboring wells in the Mesozoic bedrock units. However, off-site sources of groundwater to meet the project’s construction and decommissioning water demands (253 AFY for both construction [18-month period] and decommissioning [12-month period]) have been identified as using imported water via water trucks from the Sacramento County Water Agency or Sloughhouse Solar Project wells (Dudek 2024b, Dudek 2024c, SWCA 2024). As indicated in personal communication between Sacramento County and SCWA, SCWA provides water to local contractors for construction needs through fill stations where the contractor pays for the water. These fill stations are included in SCWA’s water supply master plan and supporting groundwater sustainability plan for the groundwater basin and SCWA could provide 253 AFY for both construction and decommissioning for the proposed project (personal communication, SCWA 2024). Additionally, in a memorandum prepared for the proposed project regarding the use of groundwater from the Sloughhouse Solar Project wells, it was concluded that the Sloughhouse Solar Project wells would have adequate yield to supply the required 253 AFY of water for construction and decommissioning activities for the proposed project. As indicated in that memorandum, the per-acre groundwater use is 0.65 AFY per acre within the Cosumnes Subbasin. Under sustainable conditions, assuming the estimated overdraft of 10,000 AFY, the sustainable per-acre groundwater use within the Cosumnes Subbasin would be approximately 0.60 AFY per acre. The 253 AF, one-year extraction is approximately 0.31 AF per acre, about half of the Cosumnes Subbasin per-acre sustainable use (Dudek 2024c).

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, which would reduce cumulative impacts. As summarized above and detailed in Chapter 10 of this EIR, 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 County 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 in the "Utilities and Service Systems" Section above, 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.

TRAFFIC AND CIRCULATION

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 discussed in the "Traffic and Circulation" section in Chapter 13, the proposed project would implement Mitigation Measure TC-3 (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.

The existing traffic volumes on Scott Road at White Rock Road range from 2,395 to 2,767 total trips per day (Sacramento County 2024). Up to 20 daily construction-related truck trips for delivery of materials would be spread over an 8-hour workday during the construction period. In addition, a maximum of 476 worker trips would occur during the a.m. and p.m. hours before and after each workday during the peak construction phase, resulting in a total of up to 972 daily vehicle and truck trips added each day to local roadways during the peak construction phase. On average, that number would be lower; the number of workers expected on-site during construction of the proposed project would vary over the construction period and would average 250 workers per day (resulting in a total of up to 500 daily vehicle trips). Project construction trips represent a short-term increase in daily traffic of about 36 to 42 percent on Scott Road. The effect on daily and peak-hour traffic volumes would be temporary, limited to the estimated 18-month construction period, and the additional vehicles would not substantially alter existing roadway capacity. Given the limited duration of construction activity, 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. According to County's *Transportation Analysis Guidelines*, the LOS C or D capacity for a two-lane, rural roadway with access and characteristics similar to Scott Road typically ranges from 3,400 to 6,000 vehicles per day (Sacramento County 2010). Even with the temporary increase in construction traffic, total daily volumes on Scott Road would remain below this capacity range, suggesting that the roadway would continue to operate at an acceptable service level during construction. Therefore, a cumulatively significant impact would not occur, and the proposed project would have a **less-than-cumulatively-considerable contribution** to any cumulative impact associated with short-term construction-related traffic.

The Sacramento County *Transportation Analysis Guidelines* (Sacramento County 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 – The project is consistent with a "small project" based on trip generation. Daily trip generation during operation of the project would be up to 42 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) 230 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.

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 an additional 32 trips per day were also included to account for water being trucked in for panel washing and sheep/goat grazing activity. The limited number of daily trips would not have the potential to substantially increase traffic volumes and impact the local or regional circulation system. Therefore, the proposed project would have a **less-than-cumulatively-considerable contribution** to any cumulative impact associated operational traffic.

TRIBAL CULTURAL RESOURCES

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 tribal cultural resources. State and federal laws related to tribal cultural resources, 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 tribal cultural resources. However, the adverse effects on tribal cultural resources on past, present, and future development is a significant cumulative impact. The proposed project would diminish the integrity of the Tosewin Tribal Cultural Landscape, which has been significantly impacted by historical and modern development of the area. The project's impact would be **cumulatively considerable**.

Mitigation Measure TCR-1 (Tribal Cultural Resource Avoidance and Minimization Plan) would provide Native American tribes an opportunity to be involved in awareness training of construction personnel, notification of pending ground disturbing activities and opportunity to monitor such activity with the authority to stop work if warranted, as well as involvement in decisions regarding the identification, treatment, and disposition of TCRs. As explained by the United Auburn Indian Community, the continued removal of native heritage oak species, as would occur under the proposed project, is considered a destruction of the overall cultural landscape that not only speaks to the history of pre-contact Sacramento Valley, but also impacts contemporary Nisenan residents on a spiritual level. Mitigation Measure BR-2 (Avoid, Minimize, and Mitigate for Impacts on Riparian Habitat and Other Sensitive Natural Communities) includes a requirement to implement oak woodland and native tree mitigation. This mitigation would avoid impacts to native trees retained within and adjacent to the solar development area, preserve oak woodland canopy at a 1:1 ratio, and establish plantings of native trees at a 1:1 tree replacement ratio. However, notwithstanding these mitigation requirements, the project

would result in the development of significant new infrastructure and visual impacts that would substantially alter the setting and feeling of contributing elements of the Tosewin Tribal Cultural Landscape. There is no additional feasible mitigation. The impact is **cumulatively considerable** and **significant and unavoidable**.

WILDFIRE

As stated in Chapter 15, "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 site is within an SRA and most of the project site classified as a Moderate Fire Hazard Severity Zone and a portion of the southeastern area designated as a Hight Fire Hazard Severity Zone (Plate WF-1 and Plate WF-2).

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. Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-6 above to result in a significant physical environmental impact related to these topics. Thus, there would be **no cumulative impact** related to these wildfire topics.

As discussed in the Chapter 13 of this EIR, "Traffic and Circulation," the proposed project would be required to implement Mitigation Measure TC-3 (Prepare and Implement Traffic Control Plan). This plan 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. 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 Public Resources Code Sections 4290, 4292, 4427, 4428, 4431, and 4442. Strict adherence to the applicable Public Resources Code requirements would ensure that wildfire risks are minimalized. As mentioned above, the proposed project would be within an SRA. The proposed project site is within an SRA and most of the project site classified as a Moderate Fire Hazard Severity Zone and a portion of the southeastern area designated as a Hight Fire Hazard Severity Zone (Plate WF-1 and Plate WF-2). Construction, operation, and decommissioning would be offset by compliance with fire safety and wildfire suppression measures identified Chapter 15, "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-2a (Demonstrate Compliance with the California Fire Code, California Building Code, and SB 38 Requirements, 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. Additionally, as described in Chapter 9 of this EIR, "Hazards and Hazardous Materials," the project would also comply with the additional current BESS Safety Standards and Regulations that would apply to the BESS portion of the project. 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.

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 existing adjacent 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.

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 only to renewable energy production co-located with agricultural use (grazing). 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 baseline 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.

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