Sacramento Municipal Utility District

Oveja Ranch Solar Project

SCH#: 2024090310

Draft Environmental Impact Report • March 2025

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ACRONYMS AND OTHER ABBREVIATIONS

°C	Celsius
°F	Fahrenheit
2017 Scoping Plan Update	California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target
2018 SIP Updates	2018 Updates to the California State Implementation Plan
2023 Ozone Plan	2023 Sacramento Regional Plan for the 2015 8-Hour Ozone Standard
3D	three-dimensional
AB	Assembly Bill
AC	alternative current
ADT	average daily traffic
AEP	annual exceedance probability
AFY	acre-feet per year
AG-160	Agriculture 160
AIA	Airport Influence Area
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ALUC	Airport Land Use Commission
ALUCP	Mather Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
APE	Area of Potential Effect
APNs	Assessor's Parcel Numbers
APP	Avian Protection Plan
ATCM	Airborne Toxic Control Measure
ATCT	air traffic control tower
ATVs	all terrain vehicles
B.P.	Before Present
BACT	best available control technology for toxics
Basin Plan	Water Quality Control Plan for the Sacramento and San Joaquin River Basins
BESS	battery energy storage system
BGEPA	Bald and Golden Eagle Protection Act
BIOS	Biogeographic Information and Observation System
BMP1	Tier 1 Best Management Practices
BMP2	Tier 2 Best Management Practices
BMPs	best management practices
Board	SMUD Board of Directors
Btus	British thermal units
ca.	circa
CAA	Clean Air Act
CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standard
CAD	Computer-aided design

CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalEnviroScreen	California Communities Environmental Health Screening Tool
CalEPA	California Environmental Protection Agency
CalGEM	California Department of Conservation, Geologic Energy Management Division
CALGreen Code	California Green Building Standards Code
CALGreen	California Green Building Code
California Geological Survey	formerly California Division of Mines and Geology
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CaRFG	California Reformulated Gasoline
CASQA	California Stormwater Quality Association
CBC	California Building Standards Code
CBSC	California Building Standards Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDF	California Department of Finance
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA Guide	CEQA Guide to Air Quality Assessment in Sacramento County
CEQA Guidelines	State California Environmental Quality Act Guidelines
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHABA	Committee of Hearing, Bio Acoustics, and Bio Mechanics
CL04	Skyway Estates Airport
CLOMR	Conditional Letter of Map Revision
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalence

Construction General Permit	National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order WQ 2022-0057-DWQ)
Construction General Permit	SWRCB 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
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSWMP	Comprehensive Stormwater Management Program
CUPA	Certified Unified Program Agency
CWA	Clean Water Act of 1972
DACs	disadvantaged communities
dB	decibels
dBA	A-weighted decibels
dBA/DD	dBA per doubling of distance
dbh	diameter at breast height
DC	direct current
DOC	California Department of Conservation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DPR	Department of Pesticide Regulation
DTSC	Department of Toxic Substances Control
DWMR	Department of Waste Management & Recycling
DWR	California Department of Water Resources
EIA	U.S. Energy Information Administration
EIR	Environmental Impact Report
EJ	environmental justice
EnviroStor	Hazardous Waste and Substances Site List
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	Endangered Species Act
ESA	Environmental Site Assessment
ESA	federal Endangered Species Act
ESS	Electrical Energy Storage Systems
EV	electric vehicle
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations

Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FHSZs	Fire Hazard Severity Zones
FHWA	Federal Highway Administration
FHZ	Flood Hazard Zone
FIRMs	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
FRAP	Fire and Resource Assessment Program
FTA	Federal Transit Administration
g	acceleration due to gravity
GGRF	Greenhouse Gas Reduction Fund
GHG	greenhouse gas
GIS	geographic information system
GIS	Geographic information systems
GLO	General Land Office
GNSS	Global Navigation Satellite System
GSA	groundwater sustainability agencies
GSP	gross state product
GSP	groundwater sustainability plans
GWP	Global Warming Potential
GWTPs	groundwater treatment plants
HAPs	hazardous air pollutants
HCFCs	Hydrochlorofluorocarbons
HCP	Habitat Conservation Plan
HFCs	hydrofluorocarbons
High GWP	High Global Warming Potential
HUC	Hydrological Unit Code
HVAC	heating ventilation and air conditioning
Hz	hertz
I-	Interstate
IBA	Important Bird Area
IFC	International Fire Code
in/sec	inches per second
IPaC	Information, Planning, and Conservation System
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Plan
ITP	Incidental Take Permit
KMHR	Sacramento Mather Airport
KOPs	key observation points
kV	kilovolt
LDL	Larson Davis Laboratories

L_{dn}	Day-Night Average Sound Level
L_{eq}	Equivalent Noise Level
LHMP	Local Hazard Mitigation Plan
L_{max}	Maximum Noise Level
L_{min}	Minimum Noise Level
LOMR	Letter of Map Revision
LOS	level of service
LPFS	local-serving public facilities/service
LT	long-term
LTA	Local Transportation Analysis
M&I	Municipal and Industrial
MACT	maximum available control technology for toxics
Mather Air Force Base	Mather Airport was formerly a military facility
MBTA	Migratory Bird Treaty Act
Metro Fire	Sacramento Metropolitan Fire District
MMRP	Mitigation Monitoring and Reporting Program
mph	miles per hour
MRZ	Mineral Resource Zone
MS4	municipal separate storm sewer system
msl	mean sea level
MT	metric tons
MW	megawatt
MWh	megawatt hours
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEC	National Electrical Code
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
OES	Sacramento County Office of Emergency Services
OHP	California Office of Historic Preservation
OPR	Governor’s Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PFCs	Perfluorinated Chemicals

PFCs	perfluorocarbons
PG&E	Pacific Gas and Electric Company
plan	South American Subbasin Groundwater Sustainability Plan
PM_{10}	PM equal to or less than 10 micrometers in diameter
$PM_{2.5}$	PM equal to or less than 2.5 micrometers in diameter
PMP	Pest Management Plan
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPUs	Preserve Planning Units
PPV	peak particle velocity
PRC	California Public Resources Code
project	Oveja Ranch Solar Project
PUC	California Public Utilities Code
PUC	Public Utility Commission
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
Regional Water Board	Central Valley Regional Water Quality Control Board
RMS	root mean square
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RWQCBs	Regional Water Quality Control Boards
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
Scoping Plan	Climate Change Scoping Plan
SCS	sustainable communities strategies
SCWA	Sacramento County Water Agency
SENL	Single-Event [Impulsive] Noise Level
SF_6	sulfur hexafluoride
SFNA	Sacramento Federal Nonattainment Area
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Office
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
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SRA	State Responsibility Areas
SSHCP FEIS/EIR	Final Environmental Impact Statement/Environmental Impact Report South Sacramento Habitat Conservation Plan

SSHCP	South Sacramento Habitat Conservation Plan
ST	short-term
State SIP Strategy	2016 State Strategy for the State Implementation Plan
Superfund	USEPA's National Priorities List
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TCRs	Tribal cultural resources
TIPG	Transportation Improvement and Program Guide
TMDL	total maximum daily load
U.S. Soil Conservation Service	Natural Resources Conservation Service, under the U.S. Department of Agriculture
U.S.C.	United States Code
UAIC	United Auburn Indian Community
UCMP	University of California, Berkeley Museum of Paleontology
UDA	Urban Development Area
UPA	Urban Policy Area
USACE	U.S. Army Corps of Engineers
USB	Urban Services Boundary
USC	U.S. Code
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
VdB	vibration decibels
Very High FHSZ	Very High Fire Hazard Severity Zones
VMT	vehicle miles traveled
VOC	volatile organic compounds
WDRs	waste discharge requirements
WEAP	Worker Environmental Awareness Program
WMP	Wildfire Mitigation Plan
WOS	waters of the state
WSA	Water Supply Assessment
WTP	water treatment plant
WUS	waters of the United States
µin/sec	microinch per second

EXECUTIVE SUMMARY

Introduction

This summary is provided in accordance with the California Environmental Quality Act (CEQA) Guidelines Section 15123. As stated in the State CEQA Guidelines Section 15123(a), "an environmental impact report (EIR) shall contain a brief summary of the proposed actions and its consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the CEQA Guidelines, this section includes: (1) a summary description of the project; (2) a synopsis of environmental impacts and recommended mitigation measures; (3) identification of the alternatives evaluated and of the environmentally superior alternative; and (4) a discussion of the areas of controversy associated with the project.

Summary Description of the Project

Sacramento Municipal Utility District (SMUD) is proposing the Oveja Ranch Solar Project, which would build and operate a photovoltaic (PV) solar power and battery storage renewable energy generation facility interconnected to SMUD's distribution grid in unincorporated southeastern Sacramento County.

Project Objectives

SMUD is committed to developing carbon free renewable energy in a manner that supports the community, protects the environment, and respects human rights. SMUD's key objectives for the project include the following:

- Contribute to a diversified energy portfolio that will aid in the continued improvement of air quality in the Sacramento Valley Air Basin by decreasing reliance on fossil fuel combustion for the generation of electricity.
- Reduce SMUD's exposure to price volatility associated with electricity and natural gas.
- Provide a renewable power resource to support the SMUD Board of Directors' 2030 Zero Carbon Plan, approved in 2021, which establishes a flexible pathway for SMUD to eliminate carbon emissions from its power supply by 2030 by developing and procuring dependable renewable resources.
- Develop a project that will deliver a reliable, long-term supply of up to 75 MW of economically feasible solar and battery storage that provides grid resiliency at a point of interconnection on the grid managed by SMUD.
- Develop an agrivoltaics project that integrates agricultural irrigation production including sheep grazing.

- Design a flexible PV solar energy and battery storage facility that is capable of utilizing the best available, efficient, cost-effective, and proven PV solar and storage technology.

- Construct the facility in a location that has ready access to existing electrical infrastructure with available capacity and roads.

Project Location

The project is located in unincorporated southeastern Sacramento County, south of the City of Rancho Cordova and north of Wilton (Table 2-1). The project site is approximately 534 acres; the northern area (80 acres total) and the southern area (454 acres total) which are not directly adjoining properties, but would be connected by a 0.5-mile-long connector line (Table 2-1). The solar panels and associated infrastructure would be located on approximately 400 acres of leased land within the project site and the proposed overhead distribution line route would encompass up to 3.5 miles of new overhead distribution lines and reconductoring of up to 4 miles of existing lines outside of the 400 acres. The project would be bound to the north by Florin Road and to the east by Eagles Nest Road. Primary access to the project site would be provided by entry roads from Eagles Nest and Florin roads.

Project Characteristics

Up to 400 acres of land would be leased by SMUD for the project. The project includes constructing PV solar panels, a battery energy storage system (BESS), a substation, and new and upgraded distribution lines to interconnect the project to SMUD's existing distribution system.

Project construction would take approximately 18 to 24 months, and is proposed to begin as early as the third quarter of 2026 and conclude in 2028. At the end of the project's useful life (anticipated to be 30 to 35 years), the site and all project components (except for the upgraded distribution lines) would be decommissioned.

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

Potential Approvals and Permits Required

Elements of the project would be subject to permitting and/or approval authority of other agencies. As the CEQA lead agency, SMUD is responsible for determining whether the EIR complies with CEQA and whether the project should be approved by SMUD's Board of Directors. Permits that may be required from other agencies are listed below.

Federal

- **U.S. Army Corps of Engineers (USACE):** Compliance with Section 404 of the Clean Water Act (CWA) for discharge of fill to Waters of the U.S., if required.

- **U.S. Fish and Wildlife Service (USFWS):** Section 7 of the Endangered Species Act (ESA) Consultation, if required.

- **State Historic Preservation Office (SHPO):** Compliance with Section 106 of the National Historic Preservation Act (required in support of CWA Section 404 permit, if required).

- **Federal Emergency Management Agency (FEMA):** Conditional Letter of Map Revision (CLOMR/LOMR) for floodplain boundary, if required.

State

- **State Water Resources Control Board:** Clean Water Act Section 402, construction general permit, if required.

- **Central Valley Regional Water Quality Control Board:** Clean Water Act Section 401, water quality certification; and/or waste discharge permit for waters of the state, if applicable.

- **California Department of Fish and Wildlife:** Compliance with California Endangered Species Act (CESA), potential permits under Section 2081 of the Fish and Game Code if take of listed species is likely to occur; and Section 1602 streambed alteration agreement for construction activities that occur within the bed, bank or channel of waterways, if required.

- **California Department of Transportation:** Encroachment permit and/or transportation management plan for any oversized equipment, such as transformers, if required.

Local

- **Sacramento County Planning and Environmental Review:** Williamson Act, i.e. California Land Conservation Act of 1965, contract amendments to allow solar generation and battery storage as a compatible use.

- **Sacramento County Department of Transportation:** Encroachment permit(s) for distribution line improvements and access points from public roads.

- **Sacramento Metropolitan Air Quality Management District (SMAQMD):** Authority to Construct/Permit to Operate pursuant to SMAQMD Regulation 2 (Rule 201 et seq.), and Air Quality Management Plan consistency determination.

Summary of Alternatives

- **No Project Alternative:** assumes no solar development occurs on the project site;

- **Alternative 1, Reduced Footprint Alternative:** assumes all project facilities would be located in the southern area and the collector line connecting the northern and southern areas would not be required;

- **Alternative 2, Farmland of Statewide Importance Impact Reduction:** assumes that the project footprint is laid out within the project site to avoid long-term impacts to Farmland of Statewide Importance. Each of these alternatives is described in more detail and analyzed below.

The following summary provides brief descriptions of the alternatives. For a more thorough discussion of project alternatives, see Chapter 6, “Alternatives.”

No Project Alternative

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 by SMUD and various permitting agencies for the project would be needed. It is unknown for how long the project site would remain in its existing condition. It is assumed that the project site would remain in long-term agricultural use; although, another compatible use could co-locate and coexist with the existing agricultural practices. It is uncertain exactly what impacts would occur: therefore, no analysis by impact topic is provided, as this would be speculative.

This alternative would not meet any of the objectives identified in Section 6.2.1, “Attainment of Project Objectives.”

Alternative 1, Reduced Footprint Alternative

Alternative 1, the Reduced Footprint Alternative, would include construction and operation of a project with a smaller footprint and higher density design, which would compress all the project facilities into the southern area of the project site. This alternative would not use the northern area and the connector line between the southern and northern areas would not be required. Thus, the total project would be occupy approximately 454 acres rather the 534 acres of the project site. Alternative 1 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. Because this alternative would eliminate the connector line, and would also eliminate the potential impacts on special-status species that utilize Laguna Creek and its associated habitat corridor (such as Sanford’s arrowhead, western pond turtle, giant garter snake, western red bat) potential impacts on these species in these locations would be eliminated. In addition, Alternative 1 would result in less loss of foraging habitat for Swainson’s hawk, burrowing owls and other raptors because there would be 80 acres less cropland that would be used to support solar fields.

Alternative 1 would attain the objectives identified in Section 6.2.1, “Attainment of Project Objectives,” because it would involve construction and operation of a PV solar facility; avoid wetlands and other sensitive habitat areas; integrate compatible agriculture activities; locate the facility as near as possible to existing electrical infrastructure with

anticipated capacity to minimize the geographical extent of impacts; utilize the best available, efficient, cost-effective, and proven PV solar technology and battery storage; and be readily accessible from existing roads.

Alternative 2, Farmland of Statewide Importance Impact Reduction

Under Alternative 2, Farmland of Statewide Importance Impact Reduction Alternative, the site layout would be identical to the proposed project, except the substation and BESS would be relocated approximately 400 feet to the south of where it is currently located for the proposed project to avoid approximately 3.8 acres of long-term impacts to Farmland of Statewide Importance. This relocation would move the substation and BESS off of Farmland of Statewide Importance and onto Farmland of Local Importance. Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project.

Alternative 2 would attain the objectives identified in Section 6.2.1, “Attainment of Project Objectives,” because it would involve construction and operation of a PV solar facility; avoid wetlands and other sensitive habitat areas; integrate compatible agriculture activities; locate the facility as near as possible to existing electrical infrastructure with anticipated capacity to minimize the geographical extent of impacts; utilize the best available, efficient, cost-effective, and proven PV solar technology and battery storage; and be readily accessible from existing roads.

Areas of Controversy

There are no known areas of controversy at this time.

Environmental Impacts and Recommended Mitigation Measures

Table ES-1 shows the environmental impacts and recommended mitigation measures for the project.

Table ES-1. Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.1 Aesthetics			
Impact 3.1-1. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	LTS	No mitigation is required.	LTS
Impact 3.1-2. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	LTS	No mitigation is required.	LTS
3.2 Agriculture and Forestry Resources			
Impact 3.2-1. 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 non-agricultural use?	PS	**Mitigation Measure 3.2-1. Preserve Farmland of Statewide Importance** • SMUD shall compensate for the loss of 3.8 acres of Farmland of Statewide Importance by preserving land of the same designation at a 1:1 ratio (i.e., 1 acre on which easements are acquired to 1 acre of Farmland of Statewide Importance removed from agricultural use). SMUD shall acquire agricultural conservation easement(s) that provide in-kind resource value protection in the region, with a strong preference for locating the agricultural conservation easement(s) in Sacramento County. This can be achieved by the acquisition of conservation easement(s), farmland deed restriction, or other appropriate farmland conservation mechanism to ensure the preservation of the land in perpetuity. • The impact acreage requiring offset shall be based on the most current FMMP at the time of Sacramento County's approval of the Williamson Act contract amendment.	LTS

NI = No impact LTS = Less than significant PS = Potential significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.2-2. Conflict with a Williamson Act Contract?	LTS	No mitigation is required.	LTS
Impact 3.2-3. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	LTS	No mitigation is required.	LTS
3.3 Air Quality			
Impact 3.3-1. Conflict with or obstruct implementation of the applicable air quality plan?	PS	**Mitigation Measure 3.3-1a. Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction** • SMUD shall include as a condition of the construction 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 the construction activities. o 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. o 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.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.3-1.(continued)		○ 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.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.3-1.(continued)		• 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. **Mitigation Measure 3.3-1b. Reduce Off-Road Equipment Exhaust-Related Emissions During Construction** • SMUD 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 if SMUD 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 3.3-3c below). Before an exemption may be considered by SMUD, 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.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.3-1.(continued)		**Mitigation Measure 3.3-1c. Submit Construction Emissions Control Plans** • Prior to SMUD's approval of contractor grading plans, the construction contractor shall submit a Construction Emissions Control Plan to the SMAQMD and provide written evidence to SMUD that the plan has been submitted to and approved by SMAQMD. The construction contractor shall not initiate any on-site or off-site construction activity until SMAQMD has approved the Construction Emissions Control Plan and proof of approval has been submitted to SMUD by the contractor. The Construction Emissions Control Plan shall cover all construction activities and include the following: • 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 throughout the construction duration. If any new equipment is added after submission of the inventory, the contractor shall notify the SMAQMD and SMUD 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 and SMUD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman. • 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) throughout the construction duration.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.3-1.(continued)		• 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 SMUD prior to the use of such equipment and trucks. The emissions calculations shall be calculated using 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. **Mitigation Measure 3.3-1d. Off-Site Construction Mitigation** If, based upon the incorporation of all measures described above in Mitigation Measures 3.3-1a through 3.3-1c, NO_X emissions still exceed the daily SMAQMD threshold for NO_X, the project shall participate in the SMAQMD's Off-site Mitigation Program by paying to SMAQMD a mitigation fee for construction activities, to be determined at the time of construction based on the submitted equipment inventories and heavy-duty truck activity and emissions calculations for NO_X emissions, such that emissions are reduced to less-than-significant. The fee calculation to mitigate daily emissions shall be based on the most recent SMAQMD mitigation fee rate at the time of calculation, which is reviewed and adjusted annually. The current mitigation fee rate is $30,000 per ton of emissions with a 5 percent administrative fee in	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.3-1.(continued)		addition to the mitigation fee. The total fee shall be determined based on the total emissions reductions of NO_X needed to reduce emissions to be less than the SMAQMD thresholds of 85 pounds per day for NO_X. The fee shall be submitted for approval by SMAQMD as the total required to achieve emissions reductions that would reduce total emissions to less-than-significant after all other mitigation measures are implemented. The fee shall be calculated, approved by SMAQMD, and paid by SMUD prior to SMUD's approval of grading or improvement plans to the construction contractor. **Mitigation Measure 3.3-1e. Implement Best Management Practices for Reducing Operational PM Emissions** • As part of the operations bid package, SMUD shall include the following best management practice requirements 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.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.3-2. Result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	PS	**Mitigation Measure 3.3-2.** Implement Mitigation Measures 3.3-1a (Implement Basic Construction Emission Control Practices [Best Management Practices] and Enhanced Fugitive PM Dust Control Practices during Construction), 3.3-1b (Reduce Off-Road Equipment Exhaust-Related Emissions During Construction), 3.3-1c (Submit Construction Emissions Control Plans), 3.3-1d (Off-Site Construction Mitigation), and 3.3-1e (Implement Best Management Practices for Reducing Operational PM Emissions).	LTS
Impact 3.3-3. Expose sensitive receptors to substantial pollutant concentrations?	LTS	No mitigation is required.	LTS
Impact 3.3-4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	NI	No mitigation is required.	NI
3.4 Biological Resources			
Impact 3.4-1. Impacts on special-status plant species.			
Sanford's arrowhead	PS	**Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection** SMUD shall prepare a Worker Environmental Awareness Program (WEAP) that shall educate staff regarding the presence or potential presence of all special-status species, sensitive natural communities, and protected wetlands and other waters that are known to occur, within the project site. The program shall describe species and sensitive community identification, special-status species habitat requirements, and penalties for special-status species impacts, as well as immediate steps to take should special-status species be observed by staff onsite.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Sanford's arrowhead (continued)		This WEAP shall include biological resource avoidance and minimization measures/mitigation measures from the project's CEQA Mitigation Monitoring and Reporting Program (MMRP), and any resource permits, as applicable. The WEAP shall educate workers regarding sensitive species and their habitats, the need to avoid impacts, state and federal protection status, and the legal implications of violating environmental laws and regulations. The WEAP can be provided in the form of a handout and/or video presentation. All staff working onsite shall attend the WEAP training prior to commencing onsite work. Staff that attend the training shall fill out a sign-in sheet indicating that they completed the training. Prior to construction, a qualified biologist shall inspect all areas within the project site with the potential to support sensitive biological resources to ensure the proper implementation of all avoidance and minimization and mitigation measures, agency permit requirements, and environmentally sensitive area exclusion flagging and/or fencing have been properly implemented, and to deliver WEAP training, as needed. The biologist shall remain available on an on-call basis for the duration of project construction to conduct inspections and follow up surveys, as needed or required by permit conditions, and to ensure compliance with permit conditions. The biologist shall have the experience, education and training necessary to conduct special-status species surveys and monitoring as described in the mitigation measures below.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Sanford's arrowhead (continued)		**Mitigation 3.4-2. Conduct Pre-construction Surveys for Sanford's Arrowhead and Avoid Impacts to Known Occurrences** Prior to culvert improvements or other project work that may affect the agricultural drainage in the southern area that provides suitable habitat for Sanford's arrowhead, and within the blooming period for Sanford's arrowhead (May 1 through October 1), a qualified botanist shall conduct a focused survey for the species within suitable habitat in this area. The botanist shall map all observations of this species and establish a no-disturbance buffer around these plants. Before construction commences, Sanford's arrowhead occurrences shall be marked with pin flags in the field, and all construction personnel shall be instructed as to the location and extent of the special-status plants or populations and the importance of avoiding impacts to the species and its habitat. If construction must occur within the no-disturbance buffer, and Sanford's arrowhead cannot be avoided, SMUD shall develop a mitigation plan for Sanford's arrowhead in coordination with CDFW. The plan shall include measures to minimize impacts and to offset any loss of Sanford's arrowhead on a 1:1 basis through protection, replanting, or purchase of credits. The plan shall be in place prior to construction activities in these areas. Information about avoidance and minimization measures for Sanford's arrowhead shall be included in the WEAP described above in Mitigation Measure 3.4-1.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Other special-status plants	PS	**Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines** Along the collection line connecting the northern area to the southern area of the project site, and the distribution lines along Florin Road, Excelsior Road, Gerber Road, and Eagles Nest Road, SMUD or their contracted engineer shall design the placement of new electricity poles and replacement of existing poles to avoid the edges of vernal pools by at least 50 feet. The perimeter of this 50-foot no-disturbance buffer shall be marked in the field prior to construction through flagging of fencing with a wildlife friendly material that allows the movement of wildlife, including western spadefoot (and also wide-ranging wildlife, such as coyotes), through the area. The marked buffer shall be maintained for the duration of project construction. No construction or ground-disturbing activities shall occur within the 50-foot buffer. Information about avoidance and minimization measures for vernal pool habitat shall be included in the WEAP described above in Mitigation Measure 3.4-1.	LTS
Impact 3.4-2. Potential impacts on vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, and Ridsecker's water scavenger beetle and impacts to their habitat during construction.	PS	Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines	LTS
Impact 3.4-3. Loss of habitat and potential impacts on monarch butterfly during construction.	LTS	No mitigation is required.	LTS
Impact 3.4-4. Potential impacts on Western spadefoot during construction.	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-4 (continued)		**Mitigation Measure 3.4-5. Avoid impacts to Western Spadefoot during Construction** Prior to any ground disturbance activity (e.g., grading, disking, road construction, or similar activities that could entomb or excavate spadefoot in grassland habitat near vernal pools) in the overhead collector line and distribution line corridors, a qualified biologist shall survey the project footprint prior to the onset of work for Western spadefoot. The qualified biologist shall identify burrows potentially suitable for Western spadefoot and mark a 50-foot non-disturbance buffer around any burrows mapped. Ground disturbance in these buffer areas shall be avoided, if feasible. If ground disturbance would be required within the 50-foot buffer, activities shall be limited to the minimum footprint necessary and shall be monitored by a qualified biologist, who would be either on-call or onsite, as appropriate to guide activities within the buffer to reduce impacts. The qualified biologist shall inform construction personnel to stop construction activities if a Western spadefoot is observed or if, in the biologist's opinion, maintenance activities threaten to cause adverse effects to Western spadefoot. If it is determined that Western spadefoot would be potentially harmed by construction, a qualified biologist may relocate animals to suitable habitats outside the project footprint. Information about avoidance and minimization measures for Western spadefoot shall be included in the WEAP described above in Mitigation Measure 3.4-1.	
Impact 3.4-5. Potential impacts on Western pond turtle during construction.	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-5 (continued)		**Mitigation Measure 3.4-6. Conduct Pre-Construction Surveys for Western Pond Turtle** A qualified biologist shall conduct a pre-construction survey for Western pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable aquatic habitat (e.g., any adjacent waterway, marsh, or emergent wetland). Concurrently with the pre-construction survey, searches for nesting sites in suitable upland habitat shall be conducted by a qualified biologist and any active nest sites identified during the survey shall be delineated with high-visibility flagging or fencing and avoided during construction activities as described below in Mitigation Measure 3.4-7. **Mitigation Measure 3.4-7. Avoid Impacts on Western Pond Turtle during Construction** Project ground-disturbing activities near suitable breeding habitat shall be conducted outside of Western pond turtle's active breeding and dispersal season (i.e., after May 1 and before September 15), to the extent feasible. If project activities must be implemented during the breeding season, they shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. If a turtle nest is encountered during the pre-construction survey (Mitigation Measure 3.4-6), a 100-foot non-disturbance buffer shall be maintained during construction and regularly monitored by a qualified biologist. Construction may resume in the buffer area after the qualified biologist has determined that the turtle eggs have hatched.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-5 (continued)		Onsite personnel shall observe a 20-mile-per-hour speed limit at all times. In addition, all BMPs identified in the project's Stormwater Pollution Prevention Plan shall be implemented, to avoid adverse effects from water quality impacts suck as sedimentation and spills. Information about avoidance and minimization measures for Western pond turtles shall be included in the WEAP described above in Mitigation Measure 3.4-1.	
Impact 3.4-6. Potential impacts on giant garter snake during construction and impacts to their aquatic habitat.	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection **Mitigation Measure 3.4-8. Conduct Pre-construction Surveys for Giant Garter Snake and Implement Avoidance and Minimization Measures** Project ground-disturbing activities in aquatic habitat and adjacent upland habitat within 200 feet of suitable aquatic habitat (perennial drainages and agricultural ditches carrying year-round water) shall be conducted during the giant garter snake's active season (i.e., after May 1 and before October 1), to the extent feasible. During this period, the potential for direct mortality is reduced, because snakes are expected to mainly occupy aquatic habitat and to actively move and avoid danger. If project activities in upland habitat occur within 200 feet of suitable aquatic habitat must be started outside of the snake's active season (May 1 to October 1), the following mitigation measures must be implemented:	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-6.(continued)		• Within 24-hours prior to commencement of construction activities within 200 feet of potential giant garter snake habitat (perennial streams and agricultural ditches that carry year-round water), the site shall be inspected by a qualified biologist who is approved by the CDFW and USFWS. Results of this clearance survey shall be reporting in memo shared with SMUD and construction should only commence after a negative inspection report. If construction activities are delayed or stop for a period of two weeks or more, another pre-construction clearance survey shall be conducted within 24 hours before resuming construction activity. If snakes, or evidence of snakes, are encountered during pre-construction surveys, a biological monitor shall be present during the commencement of construction activities in upland habitat within 200 feet of suitable aquatic habitat during the non-active season. If any snakes are observed in uplands near drainages during the active season, project activity shall be halted and the snakes shall be allowed to leave the area on their own.	
Impact 3.4-7. Potential impacts on burrowing owl during construction and operation.	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection **Mitigation Measure 3.4.9 Compensate for permanent loss of Western Burrowing Owl Habitat.** • SMUD shall mitigate for the permanent loss of 4.1 acres of burrowing owl foraging habitat at a 1:1 basis. This may be achieved through purchasing credits at an approved bank, dedicating credits at SMUD's own conservation bank, or by placing a permanent easement on 4.1 acres of suitable foraging habitat in the vicinity of the project site.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-7 (continued)		**Mitigation Measure 3.4-10. Conduct Pre-construction Surveys for Western Burrowing Owl and Implement Avoidance and Minimization Measures** • SMUD shall conduct pre-construction burrowing owl surveys in all areas that may provide suitable nesting habitat according to CDFW (CDFG 2012) guidelines and based on protocol level surveys conducted in support of this project (AECOM 2025). A qualified wildlife biologist shall conduct the surveys, including documentation of burrows and burrowing owls, in all suitable burrowing owl habitat within 500 feet of proposed construction. • Two surveys shall be conducted within 15 days prior to ground disturbance to establish the presence or absence of burrowing owls. The surveys shall be conducted at least 7 days apart (if burrowing owls are detected on the first survey, a second survey is not needed) for both breeding and non-breeding season surveys. All burrowing owls observed shall be counted and mapped. • During the breeding season (February 1 to August 31), surveys shall document whether burrowing owls are nesting in or within 500 feet of project construction activities. • During the non-breeding season (September 1 to January 31), surveys shall document whether burrowing owls are using habitat in or directly adjacent (within 500 feet) to any area to be disturbed. Survey results would be valid only for the season (breeding or non-breeding) during which the survey was conducted.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-7.(continued)		• The qualified biologist shall survey the proposed footprint of disturbance and a 500-foot buffer from the perimeter of the proposed footprint to determine the presence or absence of burrowing owls. The site shall be surveyed by walking line transects, spaced 20 to 60 feet apart, adjusting for vegetation height and density. At the start of each transect and, at least, every 300 feet, the surveyor, with use of binoculars, shall scan the entire visible project site for burrowing owls. During walking surveys, the surveyor shall record all potential burrows used by burrowing owls, as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Some burrowing owls may be detected by their calls; therefore, observers shall also listen for burrowing owls while conducting the survey. • The presence of burrowing owl or their sign anywhere on the site or within the 500-foot accessible buffer around the site shall be recorded and mapped. Surveys shall map all burrows and occurrence of sign of burrowing owl on the project site. Surveys must begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites If a burrowing owl or evidence of presence at or near a burrow entrance is found to occur within 500 feet of the project site, the following measures shall be implemented: • If burrowing owls are found during the breeding season (approximately February 1 to August 31), the project applicant shall:	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-7.(continued)		○ Avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). ○ Establish a 500-foot non-disturbance buffer zone around nests. The buffer zone shall be flagged or otherwise clearly marked. Should construction activities cause the nesting bird to vocalize, make defensive flights at intruders, or otherwise display agitated behavior, then the exclusionary buffer shall be increased such that activities are far enough from the nest so that the bird(s) no longer display this agitated behavior. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by a qualified biologist. ○ Construction may occur only outside of the 500-foot buffer zone during the breeding season and only if a qualified biologist monitors the nest and determines that the activities will not disturb nesting behavior, or the birds have not begun egg-laying and incubation, or that the juveniles from the occupied burrows have fledged and moved off site. Measures such as visual screens may be used to further reduce the buffer with CDFW approval and provided a biological monitor confirms that such measures do not agitate the owls.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-7.(continued)		• If burrowing owls are found during the non-breeding season (approximately September 1 to January 31), the project applicant shall establish a 160-foot buffer zone around active burrows. The buffer zone shall be flagged or otherwise clearly marked. Measures such as visual screens may be used to further reduce the buffer with CDFW approval and provided a biological monitor confirms that such measures do not agitate the owls. • During the non-breeding season only, if a project cannot avoid occupied burrows after all alternative avoidance and minimization measures are exhausted, as confirmed by CDFW, project applicant shall obtain an Incidental Take Permit (ITP) for the project. A burrowing owl exclusion plan must be developed by a qualified biologist consistent with the most recent guidelines from CDFW (e.g., California Department of Fish and Game 2012) and submitted to and approved by CDFW along with the ITP application. Burrow exclusion may not be conducted for burrows located in the project footprint and within a 160-foot buffer zone until the ITP is obtained. All ITP conditions must be followed when excluding owls. Information about the status of and avoidance and minimization measures for western burrowing owl shall be included in the WEAP described above in Mitigation Measure 3.4-1. **Mitigation Measure 3.4-11. WEAP Training for Operations and Maintenance Personnel** Following project construction, WEAP Training pertaining to the operation and maintenance phase of the project shall be provided each year to onsite personnel. The purpose of the training shall be to raise awareness of the	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-7.(continued)		potential use of the site by wintering and breeding burrowing owls and to avoid and minimize potential take of owls during project operation. The training shall describe the identification and natural history of burrowing owls and shall cover the avoidance and minimization measures described below. New onsite personnel shall be provided the training before they begin work at the site. • **Speed Limit.** All project traffic must observe a 20-mph speed limit. • **Pets.** No pets are allowed on the project site. • **Equipment and Material Inspection.** All construction pipe, culverts, or similar structures greater than 3 inches in diameter shall be inspected before being moved, buried or capped. • **Firearms.** No firearms are permitted on the project site. • **Survey before Ground Disturbing Activities.** If maintenance or repair activities require ground disturbing activities in areas potentially used by western burrowing owl (grazing land under solar panels, berms along roads, areas containing ground squirrel holes), a pre-construction survey for western burrowing owl shall be conducted by a qualified biologist in the disturbance area. Surveys shall be conducted using the same steps described in Mitigation Measure 3.4-9 (Pre-construction Western Burrowing Owl Measures) of the project MMRP. If burrowing owls are detected during the surveys non-disturbance buffers shall be established as described in the MMRP and a Region 2 CDFW representative) shall be contacted to discuss whether additional avoidance and minimization measures are warranted.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-7.(continued)		• **Reporting of Bird Mortality.** If operations and maintenance staff detect a bird carcass on the project site that may be a burrowing owl, Swainson's hawk, tricolored blackbird or other special status species, they shall notify SMUD who shall arrange to identify the bird. If the bird is a special-status species, SMUD shall notify a Region 2 CDFW representative immediately, record the date and the location of the carcass, collect the carcass and store it in a freezer. CDFW shall provide guidance on the disposition of the carcass. • **Injured bird.** If an injured bird is detected by the operation and maintenance staff the site operator, they shall notify SMUD who shall arrange to identify the bird and advise on how to proceed. If the injured bird is a special status bird, SMUD shall contact a Region 2 CDFW representative. With concurrence of CDFW, and if the bird is sufficiently immobile that it can be safely and readily retrieved, the bird shall be captured by a qualified biologist experienced with handling raptors and placed into an animal crate/box and stored in a cool location while being transported. The biologist shall transport the injured bird to the appropriate wildlife care facility such as the U.C. Davis California Raptor Center, 1340 Equine Lane, Davis: (530) 752-6091 California Raptor Center / School of Veterinary Medicine - Found a Sick or Injured Raptor?.	
Impact 3.4-8. Potential impacts on tricolored blackbirds during construction and permanent conversion of foraging habitat.	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-8. (continued)		**Mitigation Measure 3.4-12. Conduct Focused Pre-Construction Surveys for Nesting Tricolored Blackbird and Avoid Impacts During Construction** Construction shall occur outside of the breeding period for tricolored blackbirds (March 15 to August 1). If construction must occur within the breeding period, the following measures shall be implemented to avoid impacts to tricolored blackbirds: • **Pre-construction Tricolored Blackbird** Surveys. Before any ground-disturbing activities or vegetation clearing that may result in effects on potential habitat for tricolored Blackbird, a qualified biologist shall conduct a pre-construction survey in potentially suitable nesting habitat (i.e., blackberry thickets and cattail marsh) for this species in the project footprint and a 500-foot buffer to the project footprint. The biologist shall conduct three separate surveys, one each in mid-April, mid-May, and mid-June (Beedy, pers. comm., 2022a), and shall use methods consistent with survey protocol used by surveyors for the Western Riverside County MSHCP 2018 https://www.wrc-rca.org/species/survey_protocols/2018_Tricolored_Blackbird_Survey_Protocol.pdf). If an active nesting colony is detected during the surveys CDFW shall be consulted to provide any guidance on appropriate avoidance and minimization measures in addition to those described below.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-8. (continued)		• **Avoidance and Minimization**. Project activities shall avoid occupied Tricolored Blackbird nesting habitat. If tricolored blackbird colonies are identified during the breeding season, an approximate buffer of up to 500 feet shall be established around the colony, depending on site-specific conditions and at the discretion of a qualified biologist in consultation with CDFW. Any construction-related activities shall be excluded from the buffer until the end of the breeding season. • **Construction Monitoring**. If construction takes place during the breeding season when an active colony is present within 500 feet of construction activities, a qualified biologist shall regularly monitor construction to ensure that the buffer zone is enforced and to verify that construction is not disrupting the colony. The intensity and frequency of the monitoring shall be established in consultation with CDFW. If monitoring indicates that construction outside of the buffer is affecting a breeding colony, the buffer shall be increased, as needed, in consultation with CDFW. Information about avoidance and minimization measures for tricolored blackbird shall be included in the WEAP described above in Mitigation Measure 3.4-1.	
Impact 3.4-9. Potential impact of Swainson's hawk during construction and permanent conversion of foraging habitat.	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection **Mitigation Measure 3.4-13. Conduct Focused Pre-construction Surveys for Nesting Swainson's hawks and Implement Protective Buffers**	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-9. (continued)		• **Pre-construction Surveys**. A qualified biologist shall conduct pre-construction surveys for Swainson's hawks during the nesting season (March 1 through August 21) within the project footprint and of all suitable nesting habitat within line of sight of construction activities within a 0.25-mile radius of the project footprint. The surveys shall be conducted no more than 15 days prior to ground disturbance and shall be conducted using methods consistent with guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (SHTAC 2000) with the following exceptions: ○ Surveys shall be required within a 0.25-mile (1,320-foot) radius around the project site. In instances where an adjacent parcel is not accessible to survey because the qualified biologist was not granted permission to enter, the qualified biologist shall scan all potential nest tree(s) from the adjacent property, road sides, or other safe, publicly accessible viewpoints, without trespassing, using binoculars and/or a spotting scope to look for Swainson's hawk nesting activity; ○ Surveys shall be required from February 1 to September 15 (or sooner if it is found that birds are nesting earlier in the year); and ○ If a Swainson's hawk nest is located and presence confirmed, only one follow-up visit is required (to avoid disturbance of the nest due to repeated visits).	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-9. (continued)		• **Nest Buffers.** If active Swainson's hawk nests are found, appropriate buffers shall be established around active nest sites, in coordination with CDFW, to provide adequate protection for nesting raptors and their young. No project activity shall commence during the nesting season within the buffer areas until the qualified biologist has determined that the young have fledged, the nest is no longer active, or if reducing the buffer would not result in nest abandonment. • **Nest Monitoring.** Monitoring of the nest by a qualified biologist during construction activities may be required if the qualified biologist determines that the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the qualified biologist has confirmed that the chicks have fledged. • Information about avoidance and minimization measures for Swainson's hawk shall be included in the WEAP described above in Mitigation Measure 3.4-1. **Mitigation Measure 3.4-14. Compensate for the Loss of Swainson's Hawk Foraging Habitat** To offset net impacts on foraging habitat for breeding Swainson's hawks SMUD shall mitigate the loss of Swainson's hawk foraging habitat in accordance with CDFW recommendations (CDFG 1994) but adjusted to local conditions and based on recent studies by providing mitigation lands or securing Swainson's hawk mitigation bank credits as follows:	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-9. (continued)		• Foraging habitat permanently lost within 5 miles of an active Swainson's hawk nest tree but more than one mile from the nest tree shall be replaced with 0.75 acres of mitigation land for each acre of foraging habitat permanently lost because of project construction (0.75:1 ratio). Permanent loss resulting from the project includes the approximately 4.1-acre footprint of the BESS, substation, and roads • Foraging habitat permanently lost for nests that are within one mile of the project site shall be mitigated at a 1:1 ratio. Permanent loss resulting from the project includes the approximately 4.1-acre footprint of the BESS, substation, and roads. The nearest location relative to this area shall be confirmed prior to initiation of construction during preconstruction surveys as called for in Mitigation Measure 3.4.13. • For foraging habitat under solar panel these mitigation ratios shall be reduced to 0.25:1 for foraging habitat for active nests within 5 miles of the project and 0.5:1 for active nests within 1 mile of the project site. These reduced ratios are appropriate because Swainson's hawks foraging habitat will continue to be available in the solar fields. Foraging habitat will be maintained under the solar panels with pollinator-friendly vegetation that would support Swainson's hawk prey such as insects and small mammals. Ample foraging habitat will also remain in adjacent agricultural lands and open space preserves that are permanently protected. All mitigation lands protected under this mitigation measure shall be protected in a form acceptable to CDFW (e.g., through fee title acquisition or conservation easement) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawk.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-10. Potential impacts on greater sandhill crane and permanent conversion of foraging habitat.	LTS	No mitigation is required.	LTS
Impact 3.4-11. Disturbance of nesting white-tailed kite, northern harrier, Cooper's hawk, loggerhead shrike, song sparrow "Modesto" population, and other protected birds.	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection **Mitigation Measure 3.4-15. Conduct Pre-Construction Surveys for Nesting Birds and Raptors** Tree trimming (if required) or vegetation removal shall be conducted outside of the nesting season (i.e., the nesting season is defined as February 1 through August 31) to the greatest extent feasible. If construction activities begin during the nesting season, a qualified biologist shall conduct a survey for nesting birds no more than 3 days prior to vegetation removal or ground-disturbing activities during the nesting season within suitable habitat (i.e., February 1 through August 31). The survey shall cover the limits of construction and accessible suitable nesting habitat within 500 feet. If any active nests are observed during surveys, a qualified biologist should establish a suitable avoidance buffer from the active nest. The buffer distance shall typically range from 50 feet (for nesting passerines) to 500 feet (for nesting raptors) and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days are allowed to pass between the survey and vegetation removal activities.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-11. (continued)		**Mitigation Measure 3.4-16. Avoid Impacts on Nesting Birds and Raptors during Construction** Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted 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 nest has fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest. Information about avoidance measures to protect nesting birds and raptors shall be included in the WEAP described above in Mitigation Measure 3.4-1.	
Impact 3.4-12. Potential impacts to western red bat.	LTS	No mitigation is required.	LTS
Impact 3.4-13. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	PS	Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines	LTS
Impact 3.4-14. 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?	PS	Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-14. (continued)		**Mitigation Measure 3.4-17. Avoid, Minimize and Compensate for Impacts on state and federally protected wetlands and other waters.** Prior to project implementation, SMUD shall confirm project related potential impacts on state and federally protected wetlands based on advanced designs and obtain the necessary permits for impacts on any wetlands. These may include the following permits: • Section 1600 Streambed Alteration Agreement from CDFW (for impact on streams in the project site, including horizontal directional drilling, if necessary). • CWA Section 404 permit from USACE for impacts to WUS (not expected to be necessary based on 30 percent design). • CWA Section 401 Clean Water Certification from the Regional Water Quality Control Board for impacts to WUS (not expected to be necessary based on 30 percent design). • Waste Discharge Permit from RWQCB for impacts to WOS (anticipated, based on project impacts to a small amount of agricultural ditch qualifying as WOS based on current delineation. • As part of any permit applications, SMUD shall identify a habitat mitigation plan that shall include mitigation for impacted wetlands and waters on a no-net-loss basis. The plan may include onsite restoration, if feasible, offsite preservation, or purchasing mitigation credits from an agency-approved wetlands mitigation bank, paying an agency-approved in-lieu fee, and/or developing conservation lands to compensate for permanent loss of resources. Mitigation ratios shall be no less than 1:1 and shall be determined during the permitting process based on advanced project design.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.4-14. (continued)		• SMUD shall implement all conditions of the permits, including any performance monitoring, if required, for onsite restoration and report on the results of the monitoring to the appropriate agencies at the frequency and duration included in the permits. Wetlands and other waters protection shall be included in the WEAP described above in Mitigation Measure 3.4-1.	
Impact 3.4-15. Interference with wildlife movement, migratory routes, or native nursery sites	LTS	No mitigation is required.	LTS
Impact 3.4-16. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	LTS	No mitigation is required.	LTS
Impact 3.4-17. Conflict with provisions of the South Sacramento Habitat Conservation Plan	NI	No mitigation is required.	NI
3.5 Cultural Resources			
Impact 3.5-1 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	PS	**Mitigation Measure 3.5.1: Halt ground-disturbing activity upon discovery of subsurface archaeological features.** In the event that any pre-contact or historic-era subsurface archaeological features or deposits, including locally darkened soil (“midden”), that could conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted and a qualified professional archaeologist shall be retained to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either an historical resource, a unique archaeological resource, or a tribal cultural resource), the archaeologist	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.5-1 (continued)		shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include, but would not be limited to, preservation in place (which shall be the preferred manner of mitigating impacts to archaeological sites), archival research, subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan).	
Impact 3.5-2. Disturb any human remains, including those interred outside of dedicated cemeteries?	PS	**Mitigation Measure 3.5-2: Halt ground-disturbing activity upon discovery of human remains.** If human remains are discovered during any construction activities, potentially damaging ground-disturbing activities within 100 feet of the remains shall be halted immediately, and SMUD will notify the Sacramento County coroner and the NAHC immediately, according to PRC Section 5097.98 and Section 7050.5 of the California Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be followed during the treatment and disposition of the remains. SMUD shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. Following the coroner's and NAHC's findings, the archaeologist and the NAHC-designated Most Likely Descendant shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. PRC Section 5097.94 identifies the responsibilities for acting upon notification of a discovery of Native American human remains.	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.6 Energy			
Impact 3.6-1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	LTS	No mitigation is required.	LTS
Impact 3.6-2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	LTS	No mitigation is required.	LTS
3.7 Geology and Soils			
Impact 3.7-1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?	LTS	No mitigation is required.	LTS
Impact 3.7-2. Result in substantial soil erosion or the loss of topsoil?	LTS	No mitigation is required.	LTS
Impact 3.7-3. 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?	LTS	No mitigation is required.	LTS
Impact 3.7-4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	LTS	No mitigation is required.	LTS
Impact 3.7-5. Directly or indirectly destroy a unique paleontological resource or site?	PS	**Mitigation Measure 3.7-1: Avoid Impacts to Unique Paleontological Resources.** To minimize the potential for destruction of or damage to previously unknown unique, scientifically important paleontological resources during earthmoving activities at the project site, SMUD shall do the following:	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.7-5 (continued)		• Prior to the start of earthmoving activities, retain either a qualified archaeologist or paleontologist to develop relevant materials related to paleontological resources for inclusion in the project's Worker Environmental Awareness Program (WEAP) program to inform 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. • If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify SMUD. SMUD shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan. The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum curation for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by SMUD to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resource or resources were discovered.	
3.8 Greenhouse Gas Emissions			
Impact 3.8-1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment**?**	Potentially Cumulatively Considerable	**Mitigation Measure 3.8-1: Implement Construction GHG Emission Best Management Practices during Construction Activities** Improve fuel efficiency from construction equipment by:	Less Than Cumulatively Considerable

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.8-1.(continued)		• 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.	

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.8-1.(continued)		• Recycle or salvage non-hazardous construction and demolition debris, when practicable (goal of at least 75% by weight).	
Impact 3.8-2. 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
3.9 Hazards and Hazardous Materials			
Impact 3.9-1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	LTS	No mitigation is required.	LTS
Impact 3.9-2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	LTS	No mitigation is required.	LTS
Impact 3.9-3. 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?	LTS	No mitigation is required.	LTS
Impact 3.9-4. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	LTS	No mitigation is required.	LTS
3.10 Hydrology and Water Quality			
Impact 3.10-1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	LTS	No mitigation is required.	LTS
Impact 3.10-2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	LTS	No mitigation is required.	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.10-3. Substantially Alter Drainage Patterns or Add Impervious Surfaces that would Result in Substantial Erosion, Exceed Storm Drainage System Capacity, or Provide Substantial Additional Sources of Polluted Runoff?	LTS	No mitigation is required.	LTS
Impact 3.10-4. Substantially Alter Drainage Patterns or Add Impervious Surfaces that would Result in Increased Flooding, or Impede or Redirect Flood Flows?	LTS	No mitigation is required.	LTS
Impact 3.10-5. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	LTS	No mitigation is required.	LTS
Impact 3.10-6. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	LTS	No mitigation is required.	LTS
3.11 Land Use and Planning			
Impact 3.11-1. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	LTS	No mitigation is required.	LTS
3.12 Mineral Resources			
Impact 3.12-1: Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	NI	No mitigation is required.	NI
Impact 3.12-2: Would the project result in the loss of availability of locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	NI	No mitigation is required.	NI

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
3.13 Noise			
Impact 3.13-1. Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise.	PS	**Mitigation Measure 3.13-1. For Construction 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 construction contractors shall employ noise-reducing construction practices to avoid and minimize construction noise effects on sensitive receptors outside permitted construction hours: • Pile driving shall be limited to the hours between 6 a.m. and 8 p.m. Monday through Friday and Sunday, and between 7 a.m. and 6 p.m. on Saturdays. • 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 land uses. • All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. • All motorized construction equipment shall be shut down when not in use to prevent idling. • Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site). • Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators).	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.13-1.(continued)		• Written notification of construction activities shall be provided to all noise-sensitive receptors located within 500 feet of the project site. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification. • Should nighttime construction (including very early morning) become necessary, the project applicant shall conduct a preliminary noise assessment to evaluate the potential for exceedances at the property boundaries of the nearest sensitive receptors. This assessment will determine if additional mitigation, such as real-time noise monitoring or other measures, is warranted. This ensures compliance with the County Noise Ordinance while maintaining flexibility and practicality in project execution.	
Impact 3.13-2. Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction.	LTS	No mitigation is required.	LTS
Impact 3.13-3. Permanent Exposure of Off-Site Noise-Sensitive Receptors to Generation of Non-Transportation Noise Levels in Excess of Local Standards.	LTS	No mitigation is required.	LTS
3.14 Population and Housing			
Impact 3.14-1. 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)?	NI	No mitigation is required.	NI

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.14-2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	NI	No mitigation is required.	NI
3.15 Public Services			
Impact 3.15-1. Would the project 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:	LTS/NI	No mitigation is required. See sub-topics below.	LTS/NI
Fire protection?	LTS	No mitigation is required.	LTS
Police protection?	LTS	No mitigation is required.	LTS
Schools?	NI	No mitigation is required.	NI
Parks?	NI	No mitigation is required.	NI
Other public facilities?	NI	No mitigation is required.	NI
3.16 Recreation			
Impact 3.16-1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	NI	No mitigation is required.	NI
Impact 3.16-2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	NI	No mitigation is required.	NI
3.17 Transportation			
Impact 3.17-1: 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

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.17-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b).	LTS	No mitigation is required.	LTS
Impact 3.17-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	PS	**Mitigation Measure 3.17-1. Prepare and Implement a Traffic Control Plan.** To address potential traffic hazards during construction, prior to the commencement of construction or demolition activities, SMUD or its construction contractor shall prepare a traffic control plan for review and approval by Sacramento 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 on roadways adjacent to project site and project activities. In addition, the traffic control plan would provide for notification of emergency responders regarding the planned construction activities.	LTS
Impact 3.17-4: Result in inadequate emergency access.	PS	Implement Mitigation Measure 3.17-1. Prepare and Implement a Traffic Control Plan.	LTS
3.18 Tribal Cultural Resources			
Impact 3.18.1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section	PS	**Mitigation Measure 3.18-1. Inadvertent/Unanticipated TCR Discoveries.** • If any suspected TCRs or resources of cultural significance to UAIC, including but not limited to features, anthropogenic/cultural soils, cultural belongings or objects (artifacts), shell, bone, shaped stones or bone, or ash/charcoal deposits are discovered by any person during construction activities including ground disturbing activities, all work shall pause immediately within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. Work shall cease in and within the immediate vicinity of the find regardless of whether the construction is being actively monitored by a Tribal Monitor, cultural resources specialist, or professional archaeologist.	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?		• A Tribal Representative and SMUD shall be immediately notified, and the Tribal Representative in coordination with the SMUD shall determine if the find is a TCR (PRC Section 21074) and the Tribal Representative shall make recommendations for further evaluation and treatment as necessary. <u>Treatment and Documentation:</u> • The culturally affiliated Tribe shall consult with SMUD to (1) identify the boundaries of the new TCR and (2) if feasible, identify appropriate preservation in place and avoidance measures, including redesign or adjustments to the existing construction process, and long-term management, or 3) if avoidance is infeasible, a reburial location in proximity of the find where no future disturbance is anticipated. Permanent curation of TCRs shall not take place unless approved in writing by the culturally affiliated Tribe. • The construction contractor(s) shall provide secure, on-site storage for culturally sensitive soils or objects that are components of TCRs that are found or recovered during construction. Only Tribal Representatives shall have access to the storage. Storage size shall be determined by the nature of the TCR and can range from a small lock box to a Conex box (shipping container). A secure (locked), fenced area can also provide adequate on-site storage if larger amounts of material must be stored. • The construction contractor(s) and SMUD shall facilitate the respectful reburial of the culturally sensitive soils or objects. This includes providing a reburial location that is consistent with the Tribe's preferences, excavation of the reburial location, and assisting with the reburial, upon request.	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.18.1. (continued)		• Any discoveries shall be documented on a Department of Parks and Recreation 523 form within 2 weeks of the discovery and submitted to the appropriate California Historical Resources Information System Information Center in a timely manner. • Work at the TCR discovery location shall not resume until authorization is granted by SMUD in coordination with the culturally affiliated Tribe. • If articulated or disarticulated human remains, or human remains in any state of decomposition or skeletal completeness are discovered during construction activities, the Sacramento County Coroner shall be contacted immediately. Upon determination by the Sacramento County Coroner that the find is Native American in origin, the NAHC shall assign the Most Likely Descendent who shall work with the project proponent to define appropriate treatment and disposition of the burials.	
3.19 Utilities and Service Systems			
Impact 3.19-1. Require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			
Water	NI	No mitigation is required.	NI
Wastewater	NI	No mitigation is required.	NI
Electric Power	LTS	No mitigation is required.	LTS
Natural Gas	NI	No mitigation is required.	NI
Telecommunications Facilities	LTS	No mitigation is required.	LTS

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Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.19-2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	LTS	No mitigation is required.	LTS
Impact 3.19-3. 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?	NI	No mitigation is required.	NI
Impact 3.19-4. 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?	LTS	No mitigation is required.	LTS
Impact 3.19-5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	LTS	No mitigation is required.	LTS
3.20 Wildfire			
Impact 3.20-1. Substantially impair an adopted emergency response plan or emergency evacuation plan?	LTS	No mitigation is required.	LTS
Impact 3.20-2. 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?	LTS	No mitigation is required.	LTS

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1.0 INTRODUCTION

This draft environmental impact report (EIR) evaluates the potential environmental impacts of the proposed Oveja Ranch Solar Project. This Draft EIR has been prepared under the direction of the Sacramento Municipal Utility District (SMUD) in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000-21177) and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Sections 15000-15387) ("CEQA Guidelines"). SMUD is the lead agency for this EIR and project approval.

1.1 Purpose and Intended Uses of the Draft EIR

CEQA requires that public agencies consider the potentially significant adverse environmental effects of projects over which they have discretionary approval authority before taking action on those projects (PRC Section 21000 et seq.). CEQA also requires that each public agency avoid or mitigate to less-than-significant, wherever feasible, the significant adverse environmental effects of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts (i.e., significant effects that cannot be feasibly mitigated to less-than-significant), the project can still be approved, but the lead agency's decision-maker, in this case the SMUD Board of Directors, must prepare findings and issue a "statement of overriding considerations" explaining in writing the specific economic, social, or other considerations that they believe, based on substantial evidence, make those significant effects acceptable (PRC Section 21002, CCR Section 15093).

According to 14 CCR Section 15064(f)(1), preparation of an EIR is required whenever a project may result in a significant adverse environmental impact. An EIR is an informational document used to inform agency decision makers and the general public of the significant environmental effects of a project, identify possible ways to mitigate or avoid the significant effects, and describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

In accordance with 14 CCR Section 15161, this document is a project EIR that examines the environmental impacts of a specific project. This type of EIR focuses on the changes in the environment that would result from a specific project. In accordance with CCR Section 15161, a project EIR must examine the environmental effects of all phases of the project, including construction and operation.

Because SMUD has the principal authority over approval or denial of the project, SMUD is the lead agency, as defined by CEQA, for this EIR. Other public agencies with jurisdiction over the project are listed below in Section 1.3, "Agency Roles and Responsibilities."

1.2 Scope of the Draft EIR

Pursuant to CEQA and the CEQA Guidelines, a lead agency shall focus an EIR's discussion on significant environmental effects and may limit discussion on other effects to brief explanations about why they are not significant (PRC Section 21002.1, CCR Section 15128). This Draft EIR addresses all subject areas in Appendix G of the CEQA Guidelines.

Chapters 3.1 through 3.20 of the draft EIR consider plans, policies, and regulations adopted for the protection of the environment and public safety when making impact determinations.

1.3 Agency Roles and Responsibilities

This Draft EIR will be used by SMUD and CEQA responsible and trustee agencies to ensure that they have met their requirements under CEQA before deciding whether to approve or permit project elements over which they have jurisdiction. It may also be used by other state and local agencies, which may have an interest in resources that could be affected by the project, or that have jurisdiction over portions of the project. In addition, federal agencies may use information included in the EIR to assist in their environmental evaluation in connection with permits they would need to issue. As the lead agency pursuant to CEQA, SMUD is responsible for considering the adequacy of the EIR and determining if the project should be approved.

Under CEQA, a responsible agency is a public agency, other than the lead agency, that has responsibility to carry out or approve a project (PRC Section 21069). A trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070).

The following agencies may serve as responsible and trustee agencies for the project:

1.3.1 State

- State Water Resources Control Board
- Central Valley Regional Water Quality Control Board
- California Department of Fish and Wildlife, Region 2
- California Department of Transportation, District 3
- California State Office of Historic Preservation

1.3.2 Local

- Sacramento County Planning and Environmental Review
- Sacramento County Department of Transportation
- Sacramento Metropolitan Air Quality Management District

While not state or local agencies, the federal agencies listed below may use environmental information in this EIR to inform their permitting actions.

1.3.3 Federal

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- State Historic Preservation Office
- Federal Emergency Management Agency

1.4 CEQA Public Review Process

1.4.1 Notice of Preparation

The purpose of a Notice of Preparation (NOP) is to provide sufficient information about the project and its potential environmental impacts to allow agencies and interested parties the opportunity to provide a meaningful response related to the scope and content of the EIR, including mitigation measures that should be considered and alternatives that should be addressed (CCR Section 15082[b]). Comments submitted in response to the NOP are used by the lead agency to identify broad topics to be addressed in the EIR.

In accordance with PRC Section 21092 and CCR Section 15082, SMUD issued an NOP on September 5, 2024 to inform agencies and the general public that an EIR was being prepared and to invite comments on the scope and content of the document (Appendix INTRO-1). The NOP was submitted to the State Clearinghouse, which then distributed the NOP to potential responsible and trustee agencies; posted on the SMUD's website (https://www.smud.org/ceqa); posted with the Sacramento County Clerk; and made available at SMUD's offices. In addition, the NOP was distributed directly to Native American Tribes, the Sacramento Metropolitan Air Quality Management District, and other various stakeholders and responsible agencies. Finally, a legal notice regarding the NOP was published in the *Sacramento Bee* on September 5, 2024. The NOP was circulated for a 30-day review period, with comments accepted through October 6, 2024.

In accordance with Title 14 CCR Section 15082(c), a public scoping meeting for the EIR occurred on September 18, 2024 at Sheldon High School in Sacramento, California.

Comments on environmental issues received during the NOP public comment period are considered and addressed in this Draft EIR. Appendix INTRO-1 is a scoping summary and contains the comment letters submitted during the NOP public comment period.

1.4.2 Public Review of this Draft EIR

This Draft EIR is being circulated for public review and comment for a period of 45 days, from **March 17, 2025 to May 2, 2025**.

A public meeting will be held on **April 10, 2025** to receive input from agencies and the public on the Draft EIR.

During the public comment period, written comments from the public as well as organizations and agencies on the Draft EIR's accuracy and completeness may be submitted to SMUD. Written comments (including via email) must be received by 5:00 p.m. on **May 2, 2025**. Written comments should be addressed to:

Kim Crawford
Sacramento Municipal Utility District
Environmental Services Department
6201 S Street, MS B209
Sacramento, CA 95817

Email comments may be addressed to OvejaRanchSolar@smud.org and should contain "Oveja Ranch Solar Project" in the title. If you have questions regarding the Draft EIR, please call Kim Crawford at (916) 732-5063.

Digital copies of the Draft EIR are available at: https://www.smud.org/ceqa.

Printed copies of the Draft EIR are available for public review at the following locations:

Sacramento Municipal Utility District
Customer Service Center
6301 S Street
Sacramento, CA 95817

Sacramento Municipal Utility District
East Campus Operations Center
4401 Bradshaw Road
Sacramento, CA 95827

1.4.3 Final EIR

After the end of the public comment period, responses to comments on environmental issues will be prepared. Consistent with CCR Section 15088(b), commenting agencies will be provided a minimum of 10 days to review the proposed responses to their comments before any action is taken on the Final EIR or project. The Final EIR (containing any changes to this Draft EIR and the Responses to Comments) will then be considered for possible certification and approval by SMUD's Board of Directors. If the Board finds that the Final EIR is "adequate and complete," the Board may certify the Final EIR in accordance with CEQA. The rule of adequacy generally holds that an EIR can be certified if:

1. The EIR shows a good faith effort at full disclosure of environmental information; and

2. The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project with consideration given to its environmental impacts.

The level of detail contained throughout this EIR is consistent with Section 15151 of the State CEQA Guidelines and recent court decisions, which provide the standard of adequacy on which this document is based. The State CEQA Guidelines state:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

CEQA states that when a public agency makes findings based on an EIR, the public agency must adopt a reporting or monitoring program for those measures it has adopted or made a condition of the project approval to mitigate significant adverse effects on the environment. The reporting or monitoring program must be designed to ensure compliance during project implementation.

1.5 Organization of the Draft EIR

This Draft EIR is organized as follows:

Executive Summary. This chapter introduces the proposed Oveja Ranch Solar Project; provides a summary of the environmental review process, effects found not to be significant, and key environmental issues; and lists significant environmental impacts and mitigation measures to reduce significant impacts to a less-than-significant level.

Chapter 1: Introduction. This chapter describes the legal authority and purpose of the EIR, the scope of the environmental analysis, agency roles and responsibilities, the CEQA public review process, and organization of this Draft EIR.

Chapter 2: Project Description. This chapter describes the project background, objectives, and location, and provides a detailed description of the characteristics associated with the proposed Oveja Ranch Solar Project.

Chapter 3: Environmental Setting, Impacts, and Mitigation Measures. The resource sections within this chapter evaluate the potential environmental impacts resulting from the project. Each subsection of Chapter 3 describes the regulatory setting, environmental setting, methods and assumptions, and the thresholds of significance. Each chapter then evaluates the anticipated changes to the existing environmental conditions as results of development of the project for each resource. For any significant or potentially significant impact that would result from project implementation, mitigation measures are presented along with the remaining level of significance. Environmental impacts are numbered sequentially throughout the sections of Chapter 3 (e.g., Impact 3.1-1, Impact 3.1-2, etc.).

Any required mitigation measures are numbered to correspond to the impact numbering; therefore, the mitigation measure for Impact 3.1-1 would be Mitigation Measure 3.1-1.

Chapter 4: Cumulative Impacts. This chapter provides information about the potential cumulative impacts that would result from implementation of the project together with other past, present, and reasonably foreseeable future projects.

Chapter 5: Other CEQA Sections. This chapter provides a discussion of potential significant and unavoidable impacts, significant and irreversible commitment of resources, and growth-inducing impacts.

Chapter 6: Alternatives. This chapter provides a discussion of alternatives to the project, including the No Project Alternative; alternatives considered but rejected from further consideration; and the environmentally superior alternative.

Chapter 7: List of Preparers. This chapter identifies the individuals who contributed to the preparation of this Draft EIR.

Chapter 8: References. This chapter lists the references used in preparation of this Draft EIR.

2.0 PROJECT DESCRIPTION

This chapter presents a detailed description of the Oveja Ranch Solar Project (project), including the project location, project background and history, project objectives, proposed facilities and operations, and anticipated construction and operation activities. Sacramento Municipal Utility District (SMUD), a local community-owned, not-for-profit public agency, proposes to build and operate a photovoltaic (PV) solar power and battery storage renewable energy generation facility interconnected to SMUD's distribution grid in unincorporated southeastern Sacramento County. SMUD is proposing to construct PV solar panels, a battery energy storage system (BESS), a substation, and new and upgraded distribution lines to interconnect the project to SMUD's existing distribution system. SMUD would lease up to 400 acres of land within the 534-acre project site for the installation of solar panels, the BESS, and associated infrastructure. The project would deliver up to 75 megawatts (MW) of PV energy generation and support SMUD's 2030 Zero Carbon Plan.

2.1 Project Location

The project is located in unincorporated southeastern Sacramento County, south of the City of Rancho Cordova and north of Wilton (Exhibit 2-1). The project site is approximately 534 acres; the northern area (80 acres total) and the southern area (454 acres total) which are not directly adjoining properties, but would be connected by a 0.5-mile-long connector line (Exhibit 2-1). The solar panels and associated infrastructure would be located on approximately 400 acres of leased land within the project site and the proposed overhead distribution line route would encompass up to 3.5 miles of new overhead distribution lines and reconductoring of up to 4 miles of existing lines outside of the 400 acres. The project would be bound to the north by Florin Road and to the east by Eagles Nest Road. Primary access to the project site would be provided by entry roads from Eagles Nest and Florin roads.

2.2 Project Background and History

California's energy supply and demand is continually evolving as a result of state mandates to address climate change and supply a growing population. SMUD has designed its resource procurement plans to meet the directive by its Board of Directors to use dependable renewable resources to eliminate carbon emissions from its power supply by 2030, as described in SMUD's 2030 Zero Carbon Plan (SMUD 2021). This goal is consistent with Senate Bill 350, which was signed into law in 2015. Senate Bill 100 accelerated the deadline for reaching the 50 percent milestone to 2026, and 60 percent by 2030. The law also establishes as state policy that renewable energy resources and zero-carbon resources are to supply 100 percent of retail sales of electricity to California end use customers by 2045. SMUD has the ambitious goal of becoming 100 percent carbon free by 2030, ahead of the state target. The proposed project is an important element in helping SMUD achieve this goal.

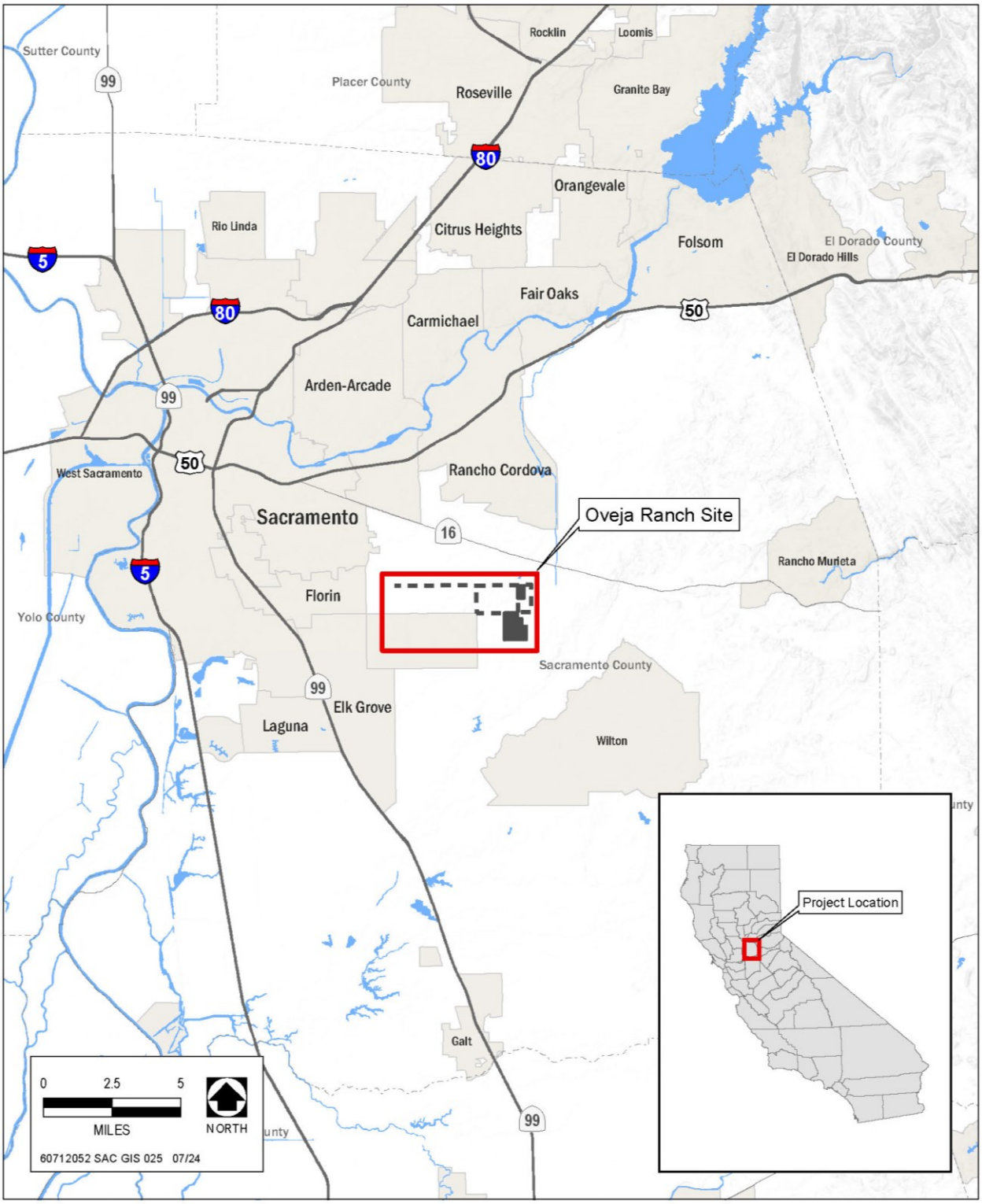


Exhibit 2-1. Regional Location Map

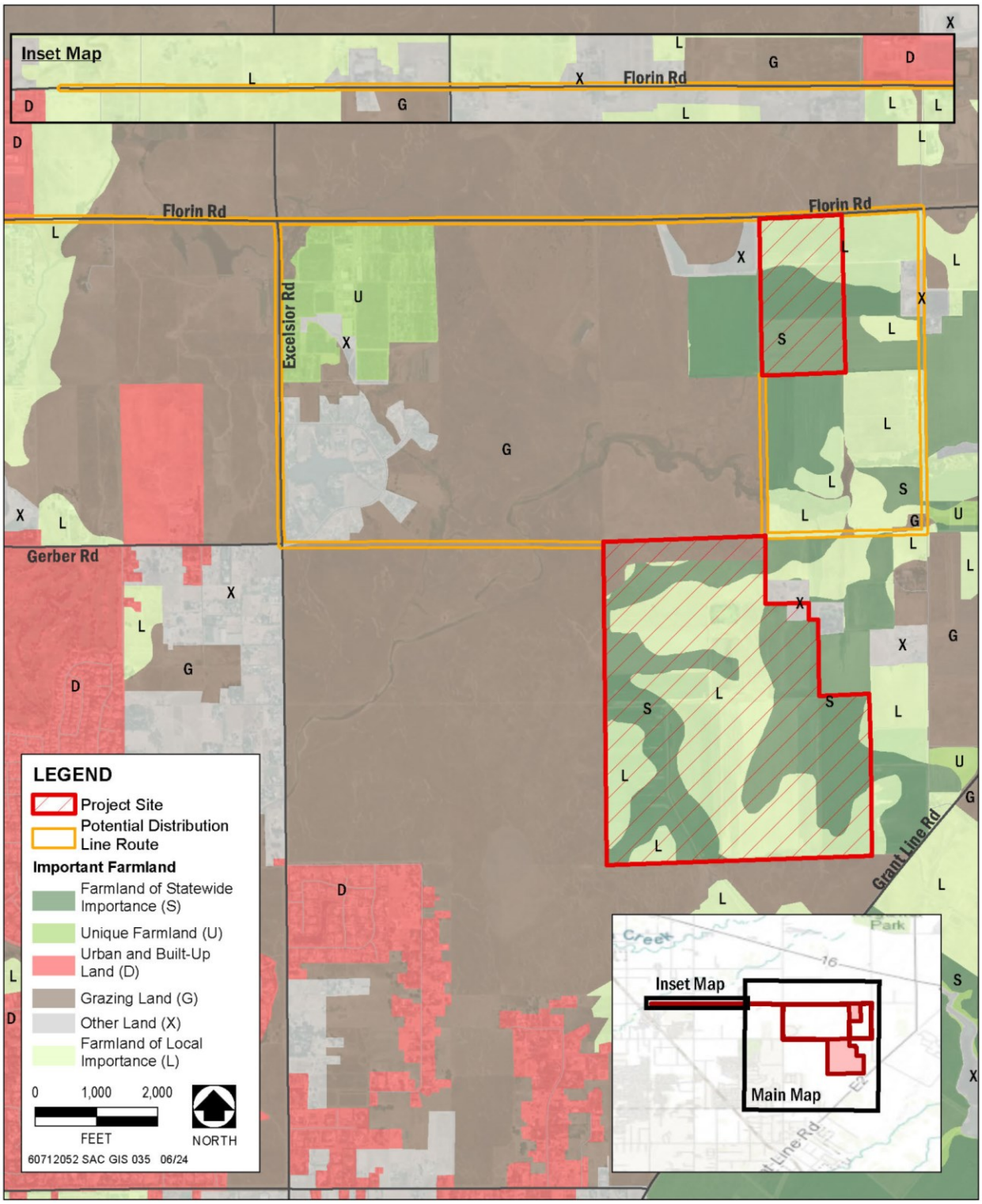
2.3 Project Objectives

SMUD is committed to developing carbon free renewable energy in a manner that supports the community, protects the environment, and respects human rights. SMUD's key objectives for the project include the following:

- Contribute to a diversified energy portfolio that will aid in the continued improvement of air quality in the Sacramento Valley Air Basin by decreasing reliance on fossil fuel combustion for the generation of electricity.
- Reduce SMUD's exposure to price volatility associated with electricity and natural gas.
- Provide a renewable power resource to support the SMUD Board of Directors' 2030 Zero Carbon Plan, approved in 2021, which establishes a flexible pathway for SMUD to eliminate carbon emissions from its power supply by 2030 by developing and procuring dependable renewable resources.
- Develop a project that will deliver a reliable, long-term supply of up to 75 MW of economically feasible solar and battery storage that provides grid resiliency at a point of interconnection on the grid managed by SMUD.
- Develop an agrivoltaics project that integrates agricultural irrigation production including sheep grazing.
- Design a flexible PV solar energy and battery storage facility that is capable of utilizing the best available, efficient, cost-effective, and proven PV solar and storage technology.
- Construct the facility in a location that has ready access to existing electrical infrastructure with available capacity and roads.

2.4 Land Use and Zoning

The proposed project (not inclusive of the overhead distribution line areas) is proposed to be located on approximately 400 acres of land, which would be leased by SMUD within the 534-acre project site. The project site potentially includes portions of Assessor's Parcel Numbers (APNs) 067-0110-083, 123-0030-003, and 123-0040-001. As shown in Exhibit 2-2, the project site includes areas characterized by the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program as grazing land, farmland of local importance, farmland of statewide importance, and other land.



Source: DOC FMMP 2020

Exhibit 2-2. DOC Designated Land within and Surrounding the Project Site

The land underlying the site is subject to Williamson Act contracts 69-AP-023.2, 69-AP-023.6, and 69-AP-023.5. The Williamson Act contracts cover the entire parcels and therefore include more land area than required for the project. Currently, the Williamson Act contracts for these parcels do not include solar PV facilities as a compatible use. As such, the property owners intend to amend their contracts to allow for solar PV facilities and battery energy storage in conjunction with agricultural activities.

These parcels are currently zoned AG-160 in the Sacramento County Zoning Ordinance (160 acres; permits one single-family residence per parcel, all agricultural uses, accessory dwellings for agricultural employees; and most institutional uses, including solar energy facilities allowed with a use permit).

As mentioned above, there are two options for the proposed distribution lines to support the project, and only one of the two options currently being studied would ultimately be built. The total study area associated with the proposed overhead distribution line options is 108 acres. It should be noted that the development footprint associated with the proposed overhead distribution lines would be small, limited to the on-the ground footprint of the new or upgraded power poles within a 25-foot-wide overhead easement.

2.4.1 Topography and Natural Habitat

Topography in the project site is generally flat (0 to 5 percent). The elevation varies between approximately 85 feet above mean sea level (msl) and 120 feet above msl.

Irrigated pastures and croplands are the dominant landcover within the project site and the surrounding land uses include low-density residential, cattle grazing, croplands, and existing open space preserves. A number of parcels surrounding the project site are subject to Williamson Act contracts, similar to the project site. Vernal pool complexes and wetlands are common in the surrounding existing preserves.

2.4.2 Existing Land Uses

The project site's current (and historic) use is agricultural production. The majority of the project site has been used for irrigated crops and forage ground for livestock. Crops have included sudan grass for seed, corn for grain, summer and winter hay, and triticale grain. The irrigated pasture has an average carrying capacity of seven ewes/lambs per acre. The southern half of the project site includes, in its northern extent, an area used for dryland grazing which includes a 19-acre vernal pool area.

An existing underground irrigation system along the farm roads within the project site is used to flood irrigate pasture and crops. The project would be designed to preserve the existing farm roads and irrigation system to ensure that it remains functional to irrigate the site during project operations.

Surrounding land uses immediately adjacent to the project site include agricultural fields and existing open space preserves with seasonal wetland, riparian, and annual grassland vegetation. Along Florin Road to the east of the site, there is an industrial business

complex that contains two building materials suppliers, Triangle Rock Products and Vulcan Materials Company, an agricultural wholesaler, Lopez AG Services, and Sacramento Compost. To the west of the project site along Florin Road, there is a wholesale plant nursery. Approximately 0.5 mile to the west, east, and southwest of the project site there are low-density residential developments (Birch Ranches, Gorman Acres, Sheldon Hills).

Frye Creek runs between the northern and southern areas of the project site. The majority of the region is privately owned and developed or in the process of development for agricultural, industrial, and residential uses.

2.4.3 Williamson Act Contract Amendments

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 permanently protect land (within agricultural preserves) for agricultural and open space purposes.

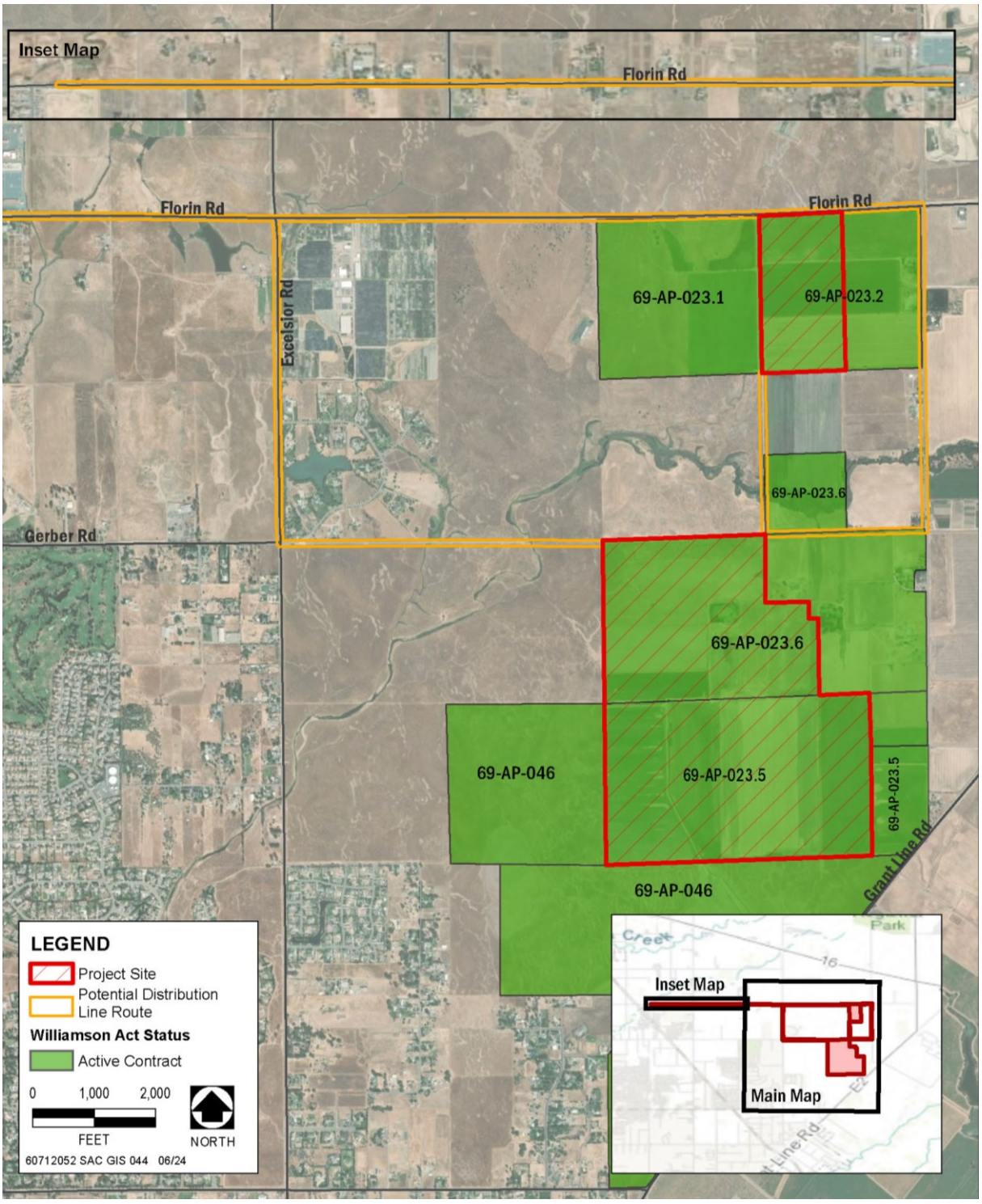
As shown in Exhibit 2-3, the entire project site is within active Williamson Act contracted properties. As outlined in Table 2-1, there are three Williamson Act contracts associated with the project site in which those Williamson Act contracts include additional land and parcels outside of the project site.

Table 2-1. Williamson Act Contracts in the Proposed Project Site

Contract Number	Total Contracted Acreage	Contracted Acreage within Project Site
69-AP-023.2 (Northern Area)	316.3	80
69-AP-023.5 (Southern Area)	318.8	263.8
69-AP-023.6 (Southern Area)	396.9	190.8
Total	**1,032.0**	**534.6**

Source: Sacramento County 2023

The Williamson Act contracts for these parcels do not currently include PV solar development as a compatible use. As such, the property owners intend to amend their contracts to allow for solar PV facilities and BESS in conjunction with their ongoing agricultural activities. PV solar was not a foreseeable activity at the time most Williamson Act contracts were executed; however, it is quickly becoming a frequent co-use of agricultural and grazing uses throughout California and elsewhere. As part of the project, the contracts would be amended to allow for solar PV facilities and battery energy storage as compatible uses, consistent with the agricultural zoning of the site.



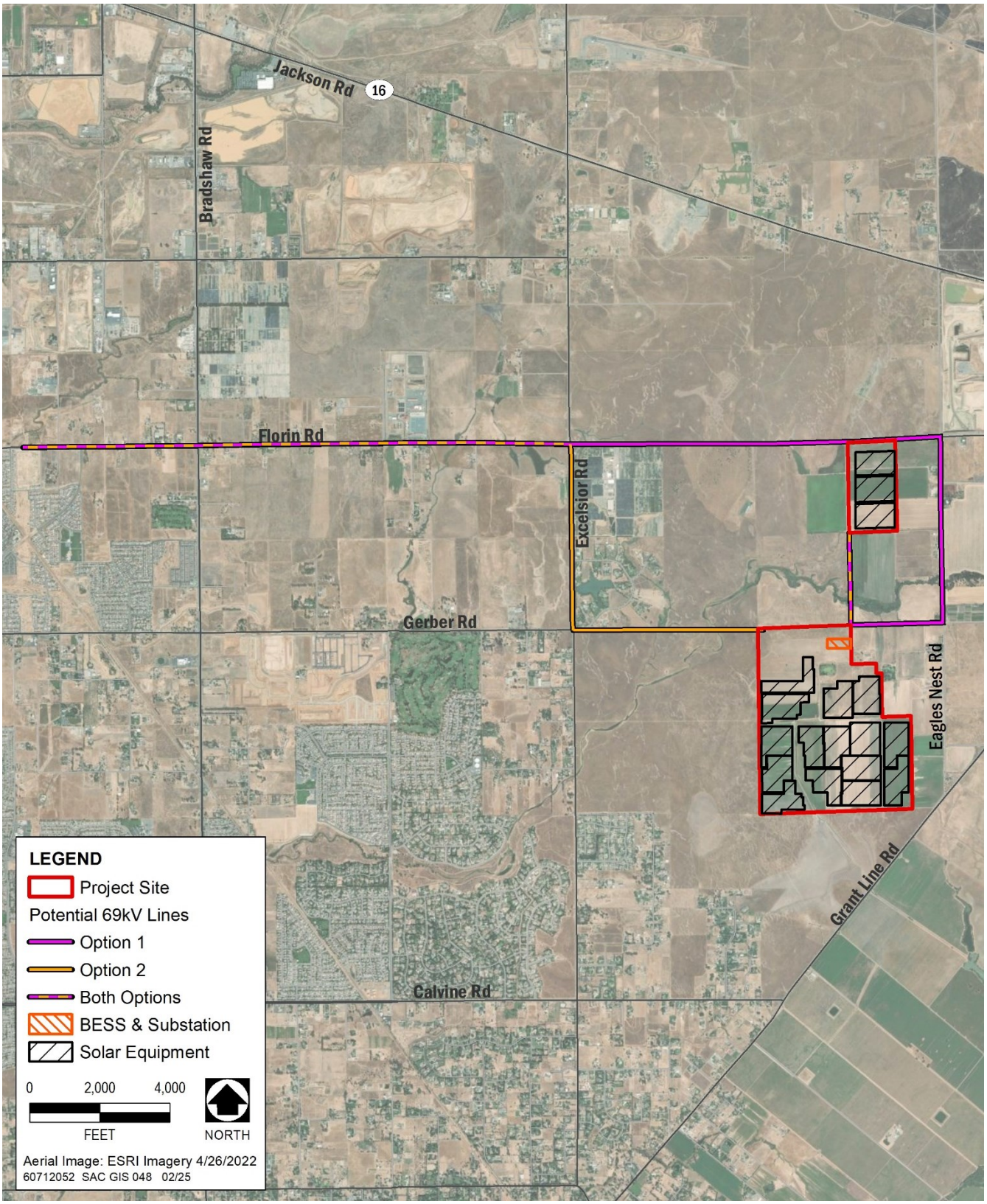
Source: Sacramento County 2023

Exhibit 2-3. Williamson Act Contract Lands within the Project Site and Adjacent Lands

2.5 Project Characteristics and Components

The Oveja Ranch Solar Project includes construction and operation of a PV solar power and battery storage facility and interconnection facilities, including a generation substation, and interconnection lines, that would provide new power production capacity of up to 75 MW delivered at the point of interconnection with the electrical grid managed by SMUD. The project components would generally comprise PV solar modules, foundation piles, racking, direct current (DC) collection, alternative current (AC) collection, fencing, roads, inverters, medium voltage transformers, generation substation equipment, BESS equipment, and interconnection lines and poles to the existing SMUD distribution system. During construction, a temporary construction trailer/office complex and staging areas would be established. During operation, the proposed project would likely include a small structure or storage container that would provide space for an onsite office for the site operator, equipment storage, and portable sanitary facilities. As described in Section 2.5.5, at the end of the project's life (anticipated to be 34 years and 11 months), the project and its assets would be decommissioned.

Exhibit 2-4 provides a conceptual site layout for the solar and battery storage facility and supporting infrastructure based on currently available 30% design drawings. Based on analysis in this Draft Environmental Impact Report (EIR) and advanced design engineering, the area ultimately developed by the project could differ slightly from what is shown in Exhibit 2-4. For example, the solar arrays could be arranged differently, the collection line layout altered, the battery storage may be in one yard area or may be dispersed within the solar arrays, the generation substation location could be modified, or the access roadway or fencing alignments could change. However, the project footprint would not be larger than that shown in Exhibit 2-4 which therefore represents the largest potential development footprint. Furthermore, development of the current layout presented in Exhibit 2-4 has been guided by resource inventories for natural and cultural resources, and the layout has been sited to avoid sensitive resources. These siting constraints would be carried forward into future engineering design.



Source: SMUD 2024, AECOM 2024

Exhibit 2-4. Proposed Project Site Components

2.5.1 Energy-Related Infrastructure

Solar Modules, Collection Systems, and Inverters

The project would install solar PV module arrays that would convert solar energy directly to electrical power to supply the electrical grid. The solar PV modules would convert the sunlight striking the modules directly into DC power, which would be transformed to AC power via an inverter. The precise configuration of the arrays within the project site may vary to avoid constraints identified over the course of environmental review and further design development.

The project would include PV modules mounted on a single-axis horizontal tracking system or a fixed tilt system, or a combination of both. The infrastructure described herein would be similar for either a single-axis tracking system or a fixed-tilt system.

A single-axis horizontal tracking system, shown in Exhibit 2-5, includes the installation of PV modules mounted on a rack with a torque tube, which would be designed to track the sun's path through the sky along a single axis. When the sun is directly overhead, the modules would be at a zero-degree angle (level to the ground). The modules would tilt in either direction (east or west), tracking the sun through the course of the day. At a horizontal position, the modules would be approximately 6 to 12 feet off the ground. The tracking system would be fixed to the ground via driven piles. Solar panels would be washed occasionally, using water from existing onsite sources.

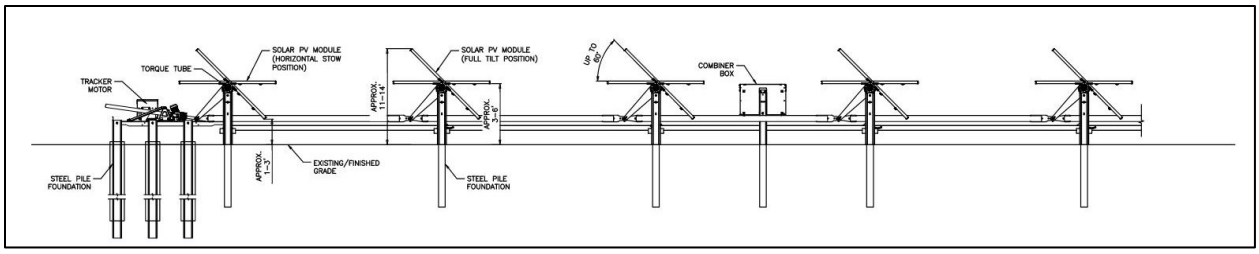


Exhibit 2-5. Single-Axis Tracker Solar PV Typical Elevation View

In addition to a single-axis horizontal tracking system, two types of fixed-tilt systems are being considered, horizontal and vertical fixed-tilt systems. If a horizontal fixed-tilt system were used, as shown in Exhibit 2-6, the modules would be fixed at an angle of approximately 15 to 25 degrees to the south. If a vertical fixed-tilt system were used, as shown in Exhibit 2-7, the modules would be mounted on two sides of the posts (bifacial) and fixed at an angle of approximately 90 degrees pointing east-west. The mounting system for both types of fixed-tilt modules would include posts driven into the ground, with table frames bolted to the driven posts. The modules would be mechanically fastened to the tables. These fixed-tilt modules would typically be up to 8 feet off the ground surface at the highest point of the array and 1 to 2 feet off the ground at the lowest point of the array depending on the terrain.

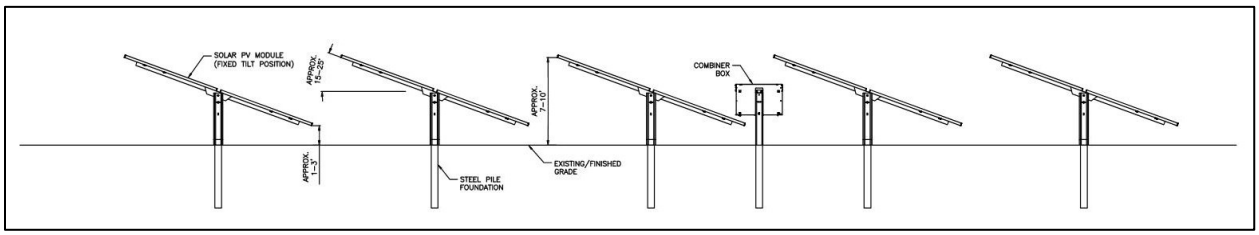


Exhibit 2-6. Horizontal Fixed-Tilt Racking Solar PV Typical Elevation View

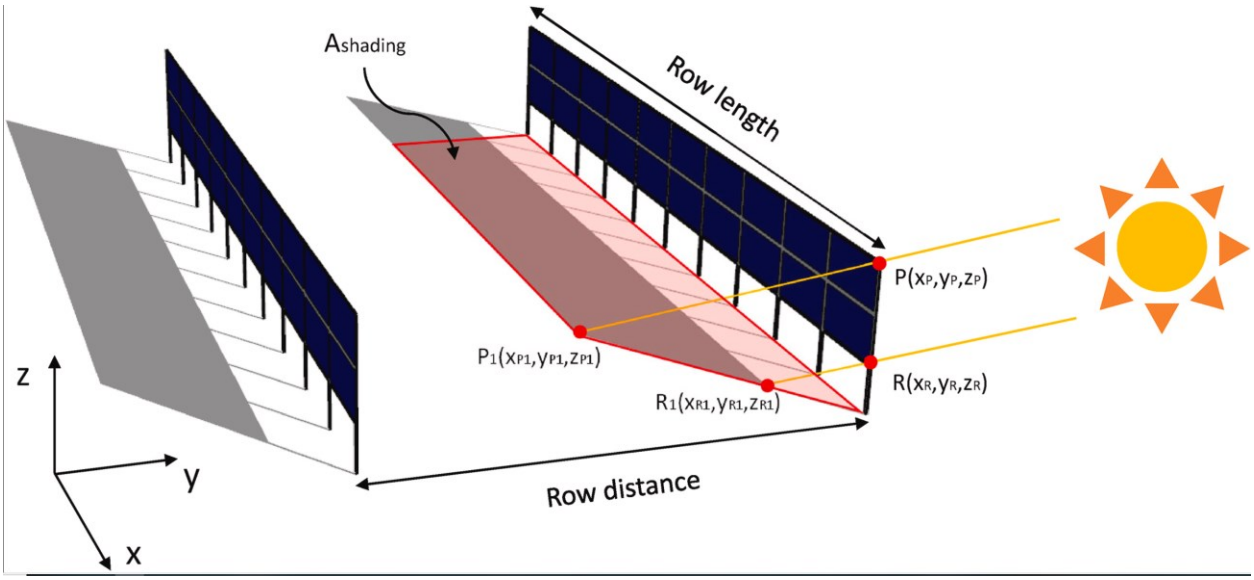


Exhibit 2-7. Vertical Fixed-Tilt Racking Solar PV Example

Depending on soil and hydrologic conditions, steel posts would be driven into the soil to a depth of approximately 3 to 8 feet. If the results of detailed geotechnical investigations indicate that driven steel posts are not an optimal foundation, other embedded foundation designs may be utilized.

The project would have an underground network of AC power cables and communication lines that would connect the array transformers to a medium voltage combining switchgear and communication equipment. The cables would typically be located in trenches up to 4 feet in depth backfilled with native soils or engineered material. This switchgear would connect, via an overhead or underground collection system, to the proposed generation substation. As discussed above, the project site would include a northern area that would include solar panels and a southern area that would include solar panels, the substation, the BESS, and other operational components. Since there would not be a substation or BESS in the northern portion of the site, the project would also include a 0.5-mile-long collector line that would run north-south between the northern part of the site to the southern part of the site and would connect both areas of the project site. Where an overhead line is used, it would be supported by wood or steel poles approximately 30 to 40 feet tall. These lines would follow existing infrastructure easements or access roads when feasible. The onsite substation would transform the final voltage to connect the project power to the existing SMUD distribution system.

Battery Energy Storage System

A lithium iron phosphate BESS is proposed to be constructed within the project footprint (see Exhibit 2-8 and Exhibit 2-9). Two main types of BESSs are being considered for the project: a DC-coupled and an AC-coupled system. A DC-coupled system would consist of multiple small battery units located on concrete skids or metal posts adjacent to the solar arrays. An AC-coupled system would consist of one or more metal containers similar in size to a shipping container likely located on a concrete pad in the battery storage area. The BESS would be connected to the proposed generation substation via an overhead or underground collection system similar to the solar component of the project.

The BESS would follow the latest fire protection safety codes including a 10,000-gallon water tank located near the BESS facility. The codes include fire prevention including fire testing, setbacks and spacing to prevent potential fires from spreading, and mitigation and suppression system requirements such as a battery management system and deflagration safety systems.

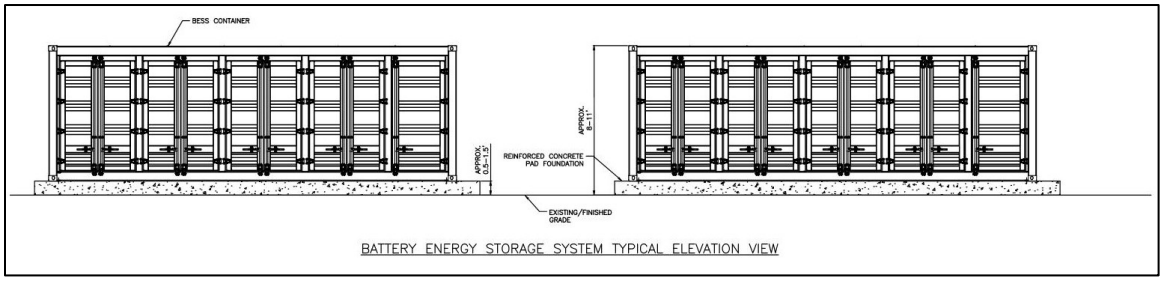


Exhibit 2-8. Battery Energy Storage System Typical Elevation View

Exhibit 2-9. Battery Energy Storage System

Substation

The proposed onsite substation would be a minimum of 350 feet by 350 feet and include three generation step-up transformers, breakers, buswork, protective relaying, meters, a site control center building, switchgear, backup power provided from the local utility, associated substation equipment, and a dedicated perimeter fence. The substation would be constructed and operated to step up the voltage of the electricity generated from the PV arrays or stored in the BESS. The substation site would be improved with compacted materials and foundations to support electrical equipment and supporting infrastructure. The substation structures would range in height from approximately 20 to 60 feet. Ten (10) foot security fencing consisting of chain link topped by barbed wire would be placed around the perimeter of the new substation.

Station service is planned to be provided via the new overhead distribution lines. Emergency generators may be needed in the event of loss of station service.

The substation may include a site control center building. The building would be less than 3,600 square feet in size and designed to meet federal, state and local building, electrical and fire codes, and may include adjacent parking for employees. During construction and operations, portable sanitary facilities would be utilized.

Interconnection Lines

- The project would interconnect to SMUD's distribution system through new and reconductored distribution facilities. The project would include up to 3.5 miles of new offsite 69 kilovolt (kV) lines and up to 4 miles of reconductored existing overhead 69kV lines. Reconductoring is the process of replacing conductor with thicker conductor to allow for an increase in capacity; reconductoring often requires replacing the existing poles. There are two options to connect the project gen-tie lines to the SMUD 69kV system, as shown in Exhibit 2-4: Option 1: install 69kV along Florin Road, Eagles Nest Road to the property line to the Oveja Ranch project site. There is existing overhead 12kV along the majority of the route; plans call for installing a double-circuit 69kV with a 12kV underbuild.

- Option 2: install new 69kV along non-public road/property line to the west of the Oveja Ranch project site. There are no existing facilities along the route. This new line would connect to existing 69kV lines along Excelsior Road between Florin Road and Gerber Road which would require reconductoring of 69kV existing single-circuit 69kV with a 12kV underbuild.

Both options include utilizing the existing 69kV line along Florin Road between approximately 300 feet east of Arroyo Willow Drive and Excelsior Road, which would require reconductoring existing single-circuit 69kV with a 12kV underbuild; the 12kV would also be reconductored since the pole line would have to be rebuilt. There is a small section that does not require reconductoring.

The overhead lines (including the overhead distribution lines and 0.5-mile-long collector line that connects the northern and southern portions of the project site) would be designed to reduce raptor and other bird collisions and electrocutions in compliance with SMUD's current Avian Protection Plan (APP) standards (SMUD 2016). Avian protection design standards and mortality reduction measures in the SMUD APP include installing flight diverters to increase overhead wire visibility in high-risk collision areas and using 60-inch clearance (minimum vertical separation of 36 inches from phase to ground on single-phase structures or 43 inches between energized conductors and ground on three-phase structures) pole design in eagle/raptor use areas. In addition, the APP requires that avian injuries and mortalities be reported to the SMUD APP Coordinator and that corrective actions be implemented if high mortality rates or avian caused power outages are recorded. Observations of injured or deceased birds during routine inspections are reported to SMUD's APP Coordinator.

2.5.2 Other Structures and Improvements

Access and Internal Road Improvements

Primary access to the project site during construction and operation would be provided by existing, or newly constructed, paved, graveled, or dirt roads and/or driveways extending to the project site from Eagles Nest and Florin roads. To the extent possible, the existing earthen farm roads within the project site would be improved and utilized to provide access to the solar and BESS equipment to accommodate ongoing maintenance of these facilities and to accommodate emergency vehicles. Internal roads within the site would be improved with a gravel overlay to minimize air quality impacts from dust during construction and reduce dust accumulation on future solar panels. Earthen or graveled roads, approximately 12 to 20 feet wide, would be constructed throughout the site and between arrays where existing farm roads cannot be utilized or new roads are needed.

Currently there is a narrow dirt road along the southern boundary of the project site, which crosses a channel supporting freshwater marsh habitat. As part of the project, SMUD would repair the existing road surface with dirt and gravel and widen it from its current width (approximately 7 feet) to a total width of approximately 12 feet. The roadway widening may require the replacement or expansion of the existing culvert to accommodate the wider road and construction of concrete headwalls or installing stone-filled gabions to stabilize the upstream and downstream slopes around the culvert. If needed, the other existing onsite culverts may need to be cleared or replaced during construction to maintain or restore optimal flows.

Utilities

Existing overhead distribution lines adjacent to and within the project site may be used to provide energy to project infrastructure during construction and operation of the project. Some existing distribution lines may need to be removed, reconfigured, and/or placed underground.

Fencing and Lighting

The entire project site would be fenced to restrict access to authorized personnel only, improve safety, isolate electrical equipment, protect onsite improvements from theft and vandalism, and minimize potential conflicts with surrounding land use. The new security fencing would be chain link and typically six feet in height and may be topped with three-strand security wire. A small gap at the bottom would allow small wildlife (e.g., small mammals, reptiles, and amphibians) passage under the fence. The final location and design of the fencing would depend on the final design of the project site. Additional fencing within the project site would be installed to protect sensitive resources (such as vernal pools and seasonal wetlands and adjacent buffers) and would remain in place during construction of the project. The fencing would be checked periodically, including after storms, and any debris build up removed by maintenance personnel.

The project would include external dark sky compliant safety lighting that may include permanent lighting on the substation, entrances to the arrays, and certain array or BESS-related equipment such as medium voltage combining switchgear. Temporary construction lighting also may be necessary. Construction lighting would be shielded and angled downwards. Mobile lighting units would be used as needed for nighttime construction activities and would also be shielded and angled downwards. No bright white lights, such as metal halide, halogen, fluorescent, mercury vapor, and incandescent lighting would be used during construction or for long-term operations. Lighting at the inverters medium voltage combining switchgear, and substation would generally be switched off and only switched on if maintenance is required outside of daylight hours.

Meteorological Station and Telecommunications

Meteorological stations, approximately 10 to 15 feet in height, would be installed within the PV solar field. Telecommunications would be provided from a local provider or a microwave/satellite communications tower. Underground and/or overhead fiber optic cables would be installed onsite and along the interconnection and collection between the solar areas, BESS yard, and the generation substation.

Setbacks

A 250-foot setback would be established from onsite vernal pools and a 25-foot setback would be established from onsite seasonal wetlands. Wildlife friendly fencing would be used to demarcate the buffer and protect the vernal pools and seasonal wetlands during construction. A 100-foot setback would be established from the BESS equipment to the BESS fenceline.

2.5.3 Construction Activities

Construction of the project would take approximately eighteen months to two years and is proposed to begin as early as the third quarter of 2026 and conclude in 2028. Preconstruction activities would include permitting, any required preconstruction resource surveys, geotechnical and other surveying, and installation of fencing. Additionally, the

contractor would begin to mobilize for construction. Construction mobilization would include preparing and constructing site access road improvements, establishing temporary construction trailers and sanitary facilities, preparing initial construction staging areas, and preparing water access areas near existing onsite wells. The project would utilize two onsite groundwater wells for construction and operations.

Construction staging and the temporary construction office would be located within the project site. Temporary lighting may be installed to facilitate deliveries and construction management. Construction staging areas would be used to store construction materials, worker parking, and provide a designated area for receiving construction deliveries, including temporary parking for delivery trucks waiting to unload. The staging areas would be cleared of vegetation during construction and may be graveled. Upon completion of construction, staging areas would be restored consistent with the rest of the site to post-construction conditions. Other temporary staging/laydown areas would also be established within the main project site during construction.

After establishment of the staging area(s), project construction would begin with initial site preparation work. Grading would be minimized to the extent feasible within the solar array areas and would be consistent with the setback requirements. Within the solar array area, limited and localized grading may be used to prepare the site for post and PV modules installation, construct inverter foundations, and to enhance or construct new access roads. Grading would likely be required for the proposed BESS yard and substation. It is assumed that earthwork would be balanced onsite when feasible, and up to 20,000 cubic yards of imported material would be needed during the grading/excavation phase and approximately 7,500 cubic yards of material would be exported during the site preparation and grading/excavation phases.

Following site preparation, vertical support posts would be driven into the ground and capped after installation. These posts would hold the support structures, or tables, on which PV modules would be mounted. Trenches for the underground AC and DC cabling and collection, and the foundations for the inverter enclosures and transformers, would be prepared. Trenching would occur within each array to place the AC and DC electrical cables underground. Upon placing the cables in the trenches, the trenches would be backfilled, and previous contours restored to the maximum extent feasible. The trenches for these cables are typically up to 4 feet deep. During construction the trenches would be covered when not in active construction or ramps provided to ensure wildlife would be able to escape. Concrete foundations and/or steel piles would be prepared for the BESS and generation substation components as well as for the interconnection and connector poles.

Once the foundations are complete, the BESS and generation substation equipment would be delivered, placed, and mounted on foundations. The BESS and generation substation components would be connected and prepared for commissioning and energization. Interconnection poles would be set at their foundation sites and conductor would be strung between the different facilities prior to commissioning and energization.

Typical construction equipment such as scrapers, dozers, dump trucks, watering trucks, motor graders, vibratory compactors, sheepsfoot, trenching and cable installation equipment, and backhoes would be used during construction. Other construction equipment that may be used would include generators, all-terrain vehicles (ATVs), pickup trucks, loaders, excavators, skid loaders, directional and other drilling equipment, road reclaimers, post drivers, forklifts, a mobile crane, and a boom lift.

Post-construction, the majority of the site would be vegetated with grazing and pollinator friendly vegetation, with the exception of the footprints for the substation, BESS yard, the solar panel support posts, the foundations for the inverters, switchgear, and transformers and roadways. The total expected permanent disturbance associated with the footprints of these features would be approximately 4.1 acres.

Fuel may be stored onsite during peak construction activities and would be stored consistent with standard construction best management practices. Self-contained concrete washout stations may be needed on the project site to support concrete foundation installation.

Construction Workforce

The expected number of construction workers onsite daily would vary by construction phase, with an expected daily average of 13 workers and a peak of 15 daily workers for the initial construction phase (site preparation) to up to a daily average of 219 workers and a maximum of 263 daily workers during the main construction phase (building/infrastructure construction). The construction workforce is expected to arrive at the project site between approximately 6:00 a.m. and 7:00 a.m. and leave the site between approximately 4:00 p.m. and 5:00 p.m., Monday through Friday for most of the project construction period. During hotter weather, construction crews may arrive earlier or leave later in the evening. Some earlier or later hours and weekend work may also be required to maintain the project construction schedule, complete critical activities, and accommodate deliveries. The number of personnel outside permitted construction hours during would depend upon the nature of the construction activity or materials being delivered to the site. As needed, mobile lighting units would be used to accommodate temporary construction activities.

Access and Traffic

Most of the traffic generated during project construction would be for employee commuting and the delivery of components and equipment. Primary access to the project site during both construction and operation would be provided from Eagles Nest and Florin roads, as shown in Exhibit 2-3. This could involve a temporary turn lane from Eagles Nest and/or Florin roads onto the project site (likely access would be from Florin Road for the northern area, and from Eagles Nest Road for the southern area) for construction, which could require road widening at that location and temporary construction access improvements.

In addition to construction workforce trips, project construction would require the following types of vehicle trips (all heavy vehicles):

- equipment and material deliveries;
- excavation, debris, and material hauling; and
- visitors, inspectors, management.

Most of the construction traffic would likely originate from Jackson Road (State Route 16) via Highway 50 or Grant Line Road via Highway 99. Materials would generally be delivered outside of the peak morning and afternoon traffic hours to the extent feasible and would be delivered to the designated receiving area. The materials would then be distributed within the site as needed. The expected number of truck trips per day would vary by construction phase, with an expected daily average of one truck trip during the paving phase to up to a daily average of 64 truck trips during the site preparation phase.

Grading and Vegetation Removal

Grading and vegetation removal is proposed along the access roads, at the location of the inverters and transformers, at the BESS yard, and the generation substation. Aside from these areas, vegetation removal and site clearing would not generally occur where solar panels would be installed. Tree removal is not anticipated. However, if tree removal is required, any applicable County tree ordinances would be adhered to. Following project construction, the majority of the site occupied by solar panels would be vegetated with grazing and pollinator friendly vegetation.

Other Site Improvements

To help prepare the project site for development of the project, the following site improvements would be completed:

- installation of a temporary 12kV line to provide power at staging yards;
- relocating existing 12kV lines providing power to wells.

Construction Waste Management and Recycling

Construction activities would generate waste and recyclables that in some cases may require offsite disposal. The California Green Building Code requires that 65 percent of construction and demolition waste be diverted from landfills.

Waste generated from the proposed project during site preparation and construction activities may consist of the following types of waste: scrap metal (copper wire, iron, steel, and aluminum); solid waste (trash, cardboard, wood products, inert organics, and concrete); and minimal hazardous waste (fuel, lubricants, and oils used by construction equipment).

All waste shipped offsite would be transported in accordance with the Department of Transportation, Code of Federal Regulations (CFR) Title 49, Subtitle B, Chapter I and California Code of Regulations (CCR), Title 13, Division 2.

Hazardous waste generated would be properly stored and disposed of in accordance with federal, state, and local regulations. No hazardous waste is expected to be generated during construction; however, construction equipment uses various hazardous materials (diesel fuel, oil, solvents, etc.). If disposal of these materials would be needed, they would be disposed of offsite in accordance with all applicable laws pertaining to the handling and disposal of hazardous waste.

2.5.4 Operation and Maintenance Activities

The project would operate seven days per week. One regular onsite employee may be required for approximately half the work week, and some personnel may visit the site to monitor, maintain, and if needed, repair the system. PV panels may be periodically washed with water during project operation, as needed. To conservatively estimate potential panel washing operational water use, it is estimated that solar panels would be washed once per year in case of excessive soiling. The project may also require occasional repair or replacement of project components. Inverters may require replacement every 10 years, while PV panels generally last 30 to 40 years. Thus, infrastructure replacement is expected to be rare. Other operational activities would include BESS equipment maintenance, interconnection equipment maintenance, production reporting, equipment inspecting and testing, and similar activities. General site maintenance would include vegetation management, road maintenance, removal of debris from fences, clearing or replacing existing culverts, and general upkeep of the facility.

After construction is complete, the project would continue to use the land for agricultural activities through continued irrigation of the pastures within the project site for grazing and possible crop production and the potential installation of pollinator friendly vegetation. Vegetation would grow under and between the modules to prevent erosion and provide forage for sheep to graze. The grazing lands would be irrigated using the existing flood irrigation system, which would be preserved to ensure that it remains functional during project operations.

Pickup trucks and flatbeds, forklifts, and loaders may be used for normal maintenance. Large, heavy-haul, transport equipment would be occasionally used to repair or replace equipment. Non-hazardous waste would be collected in designated locations and picked up/disposed of by a local waste disposal or recycling company. Oil, electronic equipment, and other potentially hazardous waste would be collected, stored, and disposed of in accordance with applicable laws and regulations.

Preventive maintenance kits and certain critical spare equipment would be stored onsite in a small structure or storage container, while all other components would be readily available from a remote warehouse facility. A Pest Management Plan (PMP) would be prepared for the project prior to approval of improvement/grading plans for operations

and maintenance that would identify the methods and frequency for management of weeds, insects, disease and vertebrate pests that may impact the project and adjacent sites.

Safety Controls

Health and safety plans would be developed for the construction and operational phases of the project. While project-specific plans have not yet been prepared, the plans would call for implementation of various measures including safety signage in accordance with applicable regulatory requirements.

Upon completion of the project the contractor is required to provide an Emergency Response Plan onsite and to local emergency responders that outlines emergency actions and responsibilities during various emergency scenarios. The contractor is responsible to provide training to the fire department on the plan.

2.5.5 Decommissioning and Site Restoration

At the end of the project's useful life (anticipated to be 34 years and 11 months), the solar panels and associated infrastructure would be decommissioned. Given the project's operating life cycle and distant timeframe for decommissioning activities, it would be too speculative to describe the specific decommissioning activities in this Draft EIR. Currently, standard decommissioning practices include dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements, and site stabilization. The project would prepare a decommissioning and reclamation plan prior to decommissioning that would detail the timeline for removal of the project components.

Actual decommissioning and site restoration activities for the project would be conducted in accordance with all applicable requirements in effect at the time of project termination, and a final decommissioning plan, based on then-current technology, site conditions, and regulations, would be prepared prior to actual decommissioning.

Under current standard decommissioning practices, solar modules are removed, collected, and recycled or disposed of at a properly licensed landfill. Some or all components (i.e., aluminum and steel components) are salvaged and/or recycled, as feasible. Components that cannot be salvaged are removed and disposed of in accordance with applicable laws and regulations.

All components of the underground system would be removed down to six feet below ground surface as part of decommissioning activities. Similarly, access roads that would conflict with other land uses would be removed and the aggregate recycled, and roads that are compatible with other land uses would be left in place. Overhead electrical collection lines, poles, and associated components would be disassembled and removed, and reprocessed, sold, salvaged, or otherwise disposed of in an appropriate manner.

Substation components including steel, conductors, switches, transformers, fencing, control houses, and other materials, typically would be removed from a site and would be repurposed, salvaged, or recycled, or disposed of in an appropriate manner.

Some grading may be required to re-contour access road areas or address erosion. Future site restoration activities are assumed to be similar to the procedures used during construction to restore temporarily disturbed areas.

The above information is provided for context only. Additional California Environmental Quality Act (CEQA) analysis would be conducted prior to decommissioning, at the time when further details are known and the decommissioning plan has been prepared.

2.6 Potential Permits and Approvals Required

Elements of the project would be subject to permitting and/or approval authority of other agencies. As the CEQA lead agency, SMUD is responsible for determining whether the EIR complies with CEQA and whether the project should be approved by SMUD's Board of Directors. Permits that may be required from other agencies are listed below.

2.6.1 Federal

- **U.S. Army Corps of Engineers (USACE):** Compliance with Section 404 of the Clean Water Act (CWA) for discharge of fill to Waters of the U.S., if required.
- **U.S. Fish and Wildlife Service (USFWS):** Section 7 of the Endangered Species Act (ESA) Consultation, if required.
- **State Historic Preservation Office (SHPO):** Compliance with Section 106 of the National Historic Preservation Act (required in support of CWA Section 404 permit, if required).
- **Federal Emergency Management Agency (FEMA)**: Conditional Letter of Map Revision (CLOMR/LOMR) for floodplain boundary, if required.

2.6.2 State

- **State Water Resources Control Board**: Clean Water Act Section 402, construction general permit, if required.
- **Central Valley Regional Water Quality Control Board:** Clean Water Act Section 401, water quality certification; and/or waste discharge permit for waters of the state, if applicable.
- **California Department of Fish and Wildlife:** Compliance with California Endangered Species Act (CESA), potential permits under Section 2081 of the Fish and Game Code if take of listed species is likely to occur; and Section 1602 streambed alteration agreement for construction activities that occur within the bed, bank or channel of waterways, if required.

- **California Department of Transportation:** Encroachment permit and/or transportation management plan for any oversized equipment, such as transformers, if required.

2.6.3 Local

- **Sacramento County Planning and Environmental Review:** Williamson Act, i.e. California Land Conservation Act of 1965, contract amendments to allow solar generation and battery storage as a compatible use.

- **Sacramento County Department of Transportation:** Encroachment permit(s) for distribution line improvements and access points from public roads.

- **Sacramento Metropolitan Air Quality Management District (SMAQMD):** Authority to Construct/Permit to Operate pursuant to SMAQMD Regulation 2 (Rule 201 et seq.), and Air Quality Management Plan consistency determination.

3.0 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter is organized by environmental resource category; each resource category is organized to provide a discussion of the existing environmental conditions (including regulatory setting and environmental setting), potential environmental effects (including direct and indirect impacts), and measures to reduce significant effects, where feasible, of construction and operation of the Oveja Ranch Solar Project.

Cumulative and growth-inducing impacts are discussed in Chapters 4, “Cumulative Impacts,” and 5, “Other CEQA Sections,” respectively.

Approach to the Environmental Analysis

In accordance with Section 15126.2 of the State CEQA Guidelines, this Draft EIR identifies and focuses on the significant direct and indirect environmental effects of the project, giving due consideration to both short-term and long-term effects. Short-term effects are generally those associated with construction, and long-term effects are generally those associated with solar facility operations.

The remainder of this chapter addresses the following resource topics:

- Section 3.1, Aesthetics
- Section 3.2, Agriculture and Forestry
- Section 3.3, Air Quality
- Section 3.4, Biological Resources
- Section 3.5, Cultural Resources
- Section 3.6, Energy
- Section 3.7, Geology, Soils, and Paleontological Resources
- Section 3.8, Greenhouse Gas Emissions
- Section 3.9, Hazards and Hazardous Materials
- Section 3.10, Hydrology and Water Quality
- Section 3.11, Land Use and Planning
- Section 3.12, Mineral Resources
- Section 3.13, Noise
- Section 3.14, Population and Housing
- Section 3.15, Public Services
- Section 3.16, Recreation
- Section 3.17, Transportation
- Section 3.18, Tribal Cultural Resources
- Section 3.19, Utilities and Service Systems
- Section 3.20, Wildfire
- Chapter 5, Other CEQA Sections (which includes an Environmental Justice Evaluation)

Sections 3.1 through 3.20 follow the same general format:

Regulatory Setting presents the laws, regulations, plans, and policies that are relevant to each issue area. Regulations originating from the federal, state, and local levels are each discussed as appropriate.

Environmental Setting presents the existing environmental conditions on the project site and surrounding area as appropriate, in accordance with the State CEQA Guidelines (CCR Section 15125). This setting generally serves as the baseline against which environmental impacts are evaluated. The extent of the environmental setting area evaluated (the project study area) differs among resources, depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin (macroscale) as well as the site vicinity (microscale), whereas noise impacts are assessed for the project site vicinity only.

Environmental Impacts and Mitigation Measures identifies the thresholds of significance used to determine the level of significance of the environmental impacts for each resource topic, in accordance with the State CEQA Guidelines (CCR Sections 15126, 15126.2, and 15143). The thresholds of significance used in this Draft EIR are based on the checklist presented in Appendix G of the State CEQA Guidelines; best available data; and regulatory standards of federal, state, and local agencies. The level of each impact is determined by comparing the effects of the project to the environmental setting. Key methods and assumptions used to frame and conduct the impact analysis as well as issues or potential impacts not discussed further (such issues for which the project would have no impact) are also described.

Project impacts are organized numerically in each subsection (e.g., Impact 3.1-1, Impact 3.1-2, Impact 3.1-3). A bold-font impact statement, a summary of each impact, and its level of significance precedes the discussion of each impact. The discussion that follows the impact summary includes the substantial evidence supporting the impact significance conclusion.

The Draft EIR must describe any feasible measures that could avoid, minimize, rectify, reduce, or compensate for significant adverse impacts, and the measures are to be fully enforceable through incorporation into the project and adoption of a Mitigation Monitoring and Reporting Plan (Public Resources Code Section 21081.6[b]). Mitigation measures are not required for effects that are found to be less than significant. Where feasible mitigation for a significant impact is available, it is described following the impact along with its effectiveness at addressing the impact. Each identified mitigation measure is labeled numerically to correspond with the number of the impact that would be mitigated by the measure. Where sufficient feasible mitigation is not available to reduce impacts to a less-than-significant level, or where SMUD lacks the authority to ensure that the mitigation is implemented when needed, the impacts are identified as remaining “significant and unavoidable.”

Terminology Used in the EIR

This Draft EIR uses the following terms to describe the level of significance of impacts identified during the environmental analysis:

Significant and Unavoidable Impact: An impact that exceeds the defined threshold of significance and cannot be eliminated or reduced to less than significant through the implementation of feasible mitigation measures.

Potentially Significant Impact: An impact that exceeds the defined thresholds of significance, and can be reduced to less than significant through implementation of feasible mitigation measures. If feasible mitigation measures are not available or would not reduce the magnitude of the impact below the threshold of significance, the impact would be determined significant and unavoidable.

Less-than-Significant Impact: An impact that does not exceed the defined thresholds of significance or that is potentially significant and can be eliminated or reduced to less than significant through implementation of feasible mitigation measures.

No Impact: Where an environmental issue is evaluated and it is determined that the project would have no effect on the issue, the conclusion is drawn that the proposed project would have "no impact" and no further analysis is presented.

Cumulative Impacts: Under CEQA, "cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when the "project's incremental effect is cumulatively considerable… [or] … provide a basis for concluding that the incremental effect is not cumulatively considerable (CEQA Guidelines, CCR Section 15130 (a))."

Mitigation Measures: The CEQA Guidelines (Title 14, CCR Section 15370) define mitigation as:

a) avoiding the impact altogether by not taking a certain action or parts of an action;
b) minimizing impacts by limiting the degree of magnitude of the action and its implementation;
c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
e) compensating for the impact by replacing or providing substitute resources or environments.

3.1 Aesthetics

Visual resources are defined as the visible natural and human-built features of the landscape that contribute to an attractive landscape appearance and the public's enjoyment of the environment.

This section summarizes regulations applicable to visual resources, describes the existing visual resources within the project site and project vicinity, and provides an assessment of potential changes to those conditions that would result from implementation of the proposed project. Effects of the proposed project on the visual environment are generally defined in terms of the proposed project's physical characteristics and the potential visibility of those changes (including changes in lighting and glare), the extent to which the proposed project would change the perceived visual character and quality of the visual environment where it is located, and the expected level of sensitivity of the viewing public in the area.

3.1.1 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 Federal Register (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 the Sacramento Mather Airport was conducted for the proposed project.

State

California Scenic Highway Program

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways.

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.

[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.

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 project site is within the Mather Airport AIA Review Area 2, which includes 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.

Sacramento County 2030 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-78. Large multi-megawatt solar and other renewable energy facilities should be sited at locations that will minimize impacts. The following guidelines should be considered, though is it [sic] recognized that each project is different and must be analyzed individually, and that other factors may affect the suitability of a site. Locational criteria for wind turbines should be determined on a case-by-case basis and referred to the Sacramento County Airport System and the FAA for review and comment.

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

- Scenic Values. Site in areas of lowest scenic values and avoid visually prominent locations e.g., ridges, designated scenic corridors and designated historic sites.

- Cultural Resources. Site in areas that are known to have limited potential for containing cultural resources. Otherwise, avoid sites with known cultural resources.

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.

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 would apply to the proposed project (i.e., a solar power generation project). However, the project is exempt from such permitting and requirements.

Sacramento County Zoning Code Sections 3.6 and 6.3

Sacramento County Zoning Code Section 3.6.6.C, Solar Energy Facilities, sets forth standards for commercial solar facilities that would apply to the proposed project. However, the proposed project is exempt from such permitting and requirements as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities.

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. However, the proposed project is exempt from such permitting and requirements as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities.

3.1.2 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.

Visual character is a description of the landscape components and is defined by the relationships between the existing visible natural and built landscape features. These relationships are considered in terms of dominance, scale, diversity, and continuity. Visual character-defining resources and features include landforms, vegetation, buildings, transportation facilities, open space, water bodies, geologic features, historic structures, downtown skylines, and apparent upkeep and maintenance of property. 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.

Viewer groups within the project vicinity represent such people as motorists, residents, and workers. Sensitivity to visual change varies among viewer types. Sensitivity to views, along with the degree of project visibility or visual exposure, affects the viewer response. Generally, as a viewer group, residents are highly sensitive viewers. Viewers are defined by their relationship to the study area, their visual preferences, and their sensitivity to changes associated with the proposed project improvements. Visual preferences, or what viewers like and dislike about the study area's visual character, factor into an area's *visual quality*. Visual quality serves as the baseline for determining the degree of visual impacts and whether a project's visual impacts would be adverse, beneficial, or neutral. 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.

Visual quality is an assessment of the composition of the character-defining features of the landscape. Visual quality is determined by evaluating the viewshed characteristics in terms of vividness, intactness, and unity (which are defined below). Visual quality is rated as low, moderate, or high. Several sets of criteria have been developed for defining and evaluating visual quality. The criteria developed by the Federal Highway Administration (FHWA) (FHWA 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 below.

- "Vividness" is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.

- "Intactness" is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements.
- "Unity" is the visual coherence and compositional harmony of the landscape considered as a whole.

Existing Land Uses

The project site's current (and historic) use is agricultural production. The majority of the project site has been used for irrigated crops and forage ground for livestock. Crops have included sudan grass for seed, corn for grain, summer and winter hay, and triticale grain. The irrigated pasture has an average carrying capacity of seven ewes/lambs per acre. The southern half of the project site includes, in its northern extent, an area used for dryland grazing which includes a 19-acre vernal pool area. Additionally, an existing underground irrigation system along the farm roads within the project site is used to flood irrigate pasture and crops. The project would be designed to preserve the existing farm roads and irrigation system to ensure that it remains functional to irrigate the site during project operations.

Existing Visual Resources/Visual Character

This environmental impacts and mitigation section, below, 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) used in support of this analysis are described in detail and photographs from each KOP, showing the existing conditions, are provided. Exhibit 3.1-1, Exhibit 3.1-3, and Exhibit 3.1-5 provide an overview of the project site, the surrounding visually sensitive land uses, and the location of each of the key viewpoints. Visual simulations showing the proposed condition at the project site as viewed from each KOP (KOP 1 through KOP 3) are provided in Exhibit 3.1-2, Exhibit 3.1-4, and Exhibit 3.1-6.

Visual Character and Quality

When viewing the same landscape, people may have different responses to the existing conditions and any proposed changes to the landscape based upon their familiarity, concern, or expectations for the specific landscape and its scenic quality. Because each person's attachment to and value of a particular landscape is unique, visual changes to a landscape inherently affect viewers differently. However, generalizations can be made about different viewer groups and their sensitivity to visual quality and change.

The duration of views from these KOPs is variable and largely dependent on the type of viewer. For the purpose of this analysis, viewers are categorized into travelers and neighbors. Travelers include drivers and vehicle passengers, and neighbors include residents and workers in the project area.

The proposed project is located on relatively flat terrain from the viewpoint of passing travelers. Most roadways within and adjacent to the project area provide long segments

of road with no signalized or non-signalized intersections. The higher vehicle speeds allowed on these roadways reduce the opportunity for prolonged views of the project areas. Given these considerations, viewer sensitivity is considered low for travelers viewing the various project components as they travel by the project site. Neighbors, such as the residents of the few homes located near the project site, and firefighters of nearby Sacramento Fire District Station 55, are assumed to have a heightened degree of familiarity with the existing visual landscape. These viewers would have a higher degree of exposure due to residing nearby. Therefore, neighbors would have moderate to moderate high viewer sensitivity.

As explained above, the existing visual quality of the project area can be generally described as high, moderate, or low. High visual quality within the measures of vividness, intactness, and unity would generally correspond to few or no human-built elements and undesirable visual features being present in a particular view. Low visual character or quality within these measures would generally correspond to human-built elements and undesirable visual features being dominant in the view, with moderate being between high and low.

Designated Scenic Roadways

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 north of the project site. The nearest State-eligible scenic highway is State Route 49, approximately 22 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. Scott Road, from White Rock Road south to Latrobe Road, is a County-designated scenic corridor (Sacramento County 2022a: Circulation Element). The project site is approximately 9 miles northeast from the Scott Road Scenic Corridor. Due to the intervening distance, topography, and vegetation, the project site is not visible from Scott Road.

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 the Sacramento Mather Airport is provided below for context related to the glare analysis.

The runways at the publicly-owned Sacramento Mather Airport are approximately 4.7 miles north of the project site. Mather Airport has a control tower, two asphalt/concrete runways that are approximately 11,300 and 3,500 feet long, respectively, along with two helipads. The runways and helipads are lighted. Mather Airport was formerly a military facility (Mather Air Force Base), which was decommissioned and is now a County-owned and operated public use airport. In 2018, there were 52 aircraft based at the field, and there were approximately 272 flights per day averaged over the 12-month period. Mather Airport accommodates large transport planes and high-performance military jets (AirNav 2024).

Existing light and glare on the proposed project site is minimal. The project site is located on undeveloped farmland, which features no artificial lighting. Additionally, the parcels surrounding the project site are primarily undeveloped agricultural land. Existing sources of glare during the day are from windshields of vehicles on nearby local roads, which are transient. Nighttime lighting and glare are produced by traffic headlights traveling on local roads.

The closest substantial sources of light and glare to the project site are the industrial business complex east of the site and low-density residential developments approximately 0.5-mile to the west, east, and southwest of the site.

3.1.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

Visual Simulations

The development of photographic simulations is assisted with the determination and verification of the impacts associated with the project area. The approach used to develop photographic simulations is broken down into six main steps:

data collection
determine observation points
modeling/texturizing
virtual cameras aligned to collected data
rendering
compositing/layout.

Collecting various data types and sources, such as Geographic Information System (GIS) data, is crucial in the initial development of an accurate 3D visual simulation. Observation points were determined by analyzing potential impacts and sensitive areas and potential visibility was evaluated by conducting either a viewshed analysis or terrain map/modeling software.

Computer-aided design (CAD) drawings were then either created or imported from client provided data to create a three-dimensional (3D) environment to scale. The 3D model was then imported into Autodesk 3Ds Max software where colors, textures and lighting

are applied to the model for rendering. Virtual cameras within the 3D model were then aligned with digital elevation models collected from the GIS process.

The 3D model, the virtual 3D camera position and the lighting information was then rendered to generate a two-dimensional image of the proposed project and composited with the site photography taken as a panoramic with the images stitched together. The subsequent renderings created show detailed information about the future proposed project location and scene.

Changes in Visual Character

The evaluation of potential impacts of the proposed project on aesthetics was based on consideration of both the visual character and quality of the resource affected, and the value assigned to the resource based on viewers. The aesthetic value of an area is a measure of the variety and contrast of the area's visual features, the character and quality of those features, and the scope and scale of the scene, combined with the anticipated viewer response. The analysis of aesthetics impacts for this project uses a qualitative approach for characterizing and evaluating the visual resources of the areas that could be affected by the proposed project. This approach was based on the following three steps:

1. An objective inventory of the visual features or visual resources that comprise the landscape.
2. An assessment of the character and quality of the visual resources in the context of the overall character of the regional visual landscape.
3. Consideration of the importance to viewers, or sensitivity of the viewers, to the identified visual resources in the landscape.

Changes in foreground views from a position where large numbers of viewers are relatively stationary for extended periods would generate greater viewer exposure than changes in a background view seen by a limited number of viewers driving rapidly past the viewing site. Viewer sensitivity relates to viewer expectations and the extent of the public's concern for a particular viewshed. Viewers undertaking recreational activities in a location known for high-quality aesthetic resources are expected to have higher expectations and express greater concern relative to preservation of scenic conditions than workers in an industrial setting in an urban area. The significance of the change on scenic qualities of the landscape and publicly available viewpoints is evaluated using the thresholds below.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the proposed project would result in a potentially significant impact on aesthetics if it would do the following:

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

Issues Not Discussed Further

Substantial Adverse Effect on a Scenic Vista— A scenic vista is generally defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality, or a natural or cultural resource that is indigenous to the area. Scenic vistas consist of outstanding examples of the natural environment, or the built environment considering the surrounding context and setting. Scenic vistas exhibit the highest degree of vividness, intactness, and unity, and consist of outstanding examples that are often regarded as "the best of its kind." No County-designated scenic vistas are located within the proposed project site or vicinity. The project site consists of generally flat agricultural land with fencing and utility poles. The project site does not contain any unique geologic features, waterfalls, rock outcroppings, gorges, mountains, large stands of native trees, or other features that could be regarded as outstanding scenic features. Therefore, **no impact** on scenic vistas would occur and this topic is not evaluated further in this EIR.

Damage Scenic Resources along a Scenic Highway— As discussed above, there are no Caltrans designated or eligible state scenic highways adjacent to or in the vicinity of the project site. In addition, there are no County roadway segments designated as scenic highways or scenic corridors. Therefore the proposed project would not substantially damage scenic resources, including trees, rock outcroppings, and historic buildings, along a state scenic highway would occur. The proposed project would have no impact on scenic highways and this issue is not discussed further in this EIR.

Impact Analysis

Impact 3.1-1. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Construction

During the project's 18 month to two year construction phase, construction equipment, personnel, and materials storage on-site would be visible from publicly accessible viewpoints, such as KOP 1, 2 and 3. 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 phase. Therefore, the impact to visual character and quality during construction would be **less than significant**.

Operation

Buildout of the proposed project would include operation of a PV solar power and battery storage renewable energy generation facility interconnected to SMUD's distribution grid on approximately 400 acres of leased land in unincorporated southeastern Sacramento County. SMUD is proposing to construct photovoltaic (PV) solar panels, a battery energy storage system (BESS), a substation, and new and upgraded distribution lines to interconnect the project to SMUD's existing distribution system. The proposed onsite substation would be a minimum of 350 feet by 350 feet and range in height from approximately 20 to 60 feet. Ten (10) foot security fencing consisting of chain link topped by barbed wire would be placed around the perimeter of the new substation and BESS.

The project would interconnect to SMUD's distribution system through new and reconductored distribution facilities. The project would include up to 3.5 miles of new offsite 69 kilovolt (kV) lines and up to 4 miles of reconductored existing overhead 69kV lines.

Additionally, meteorological stations, approximately 10 to 15 feet in height, would be installed within the PV solar field. The exact locations of the meteorological stations would be determined during final design. These facilities could be seen above the horizon depending on where they are located within the site. However, they are not expected to introduce substantial urban elements that would substantially interfere with the viewshed of the project site.

All project facilities, including operations and maintenance buildings, poles, and array facilities, would blend in with the colors found in the natural landscape, and all color treatments would be matte or nonglossy finishes. Following project construction, the majority of the site occupied by solar panels would be vegetated with grazing and pollinator friendly vegetation.

Potential impacts from project operation are analyzed below for the three representative public viewpoints described below.[2] The analysis focuses on viewer sensitivity and changes to visual quality via changes in vividness, unity, and intactness.

Table 3.1-1 summarizes the representative viewpoints of the areas surrounding the project site and provides a KOP summary, including KOP number, location, and view direction. This is followed by brief descriptions of the foreground, middleground, and background characteristics of each KOP and the existing visual quality of the project site and surrounding area.

Table 3.1-1. Viewpoint Summaries

KOP Number	Location	View Direction
1	Intersection of Florin and Eagles Nest roads	Southwest
2	Excelsior Road at the Sacramento Metro Fire District Station 55	East
3	Eagles Nest Road	West

Viewpoint 1: Existing Conditions and Visual Simulation at KOP 1 (Intersection of Florin and Eagles Nest roads)

KOP 1 is the viewpoint looking southwest from the intersection of Florin and Eagles Nest Roads. It is the view looking southwest from the intersection of Florin and Eagles Nest Roads, and is approximately 0.25-mile northeast of the project site. The existing view and the visual simulation of the project from KOP 1 are provided in Exhibit 3.1-1 and Exhibit 3.1-2, respectively.

The foreground of this view is dominated by the asphalt roadway, low wire fencing with wooden posts, and utility poles. Overhead utility lines cross above, and continue off into the distance, parallel to the roadway and fencing. The topography of the view is flat, and the middleground and background are covered with undeveloped agricultural land and grasslands. Low, gently rolling hills and trees are barely visible in the distant background. A single house is also visible to the left of KOP 1.

The vividness of KOP 1 is low due to the lack of visual diversity and contrast within this view. The roadway, adjacent agricultural land, and few built features meld visually and lack distinctly memorable features. The intactness and unity of KOP 1 are moderate. The built features within this view are not particularly intrusive, but also do not serve to complement the natural visual order. Overall, the visual quality of KOP 1 is moderate-low based on the assessed vividness, intactness, and unity of this view.

In Exhibit 3.1-2, the simulation shows the proposed solar arrays towards the northeastern portion of the project site would be slightly visible from KOP 1. Additionally, the project

[2] 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]).

would modify or replace the utility infrastructure (i.e., poles and electrical lines) visible in the foreground.

The proposed solar arrays would slightly contrast with the rural character of the visual environment at KOP 1. Visual quality may be slightly reduced by the addition of a new built features that do not serve to complement the visual harmony of this viewpoint. The overall reduction in visual quality would be moderate-low to low.

Viewers at KOP 1 would primarily be motorists on Eagles Nest and Florin Roads. These viewers would have moderately low to low sensitivity, as they would only be exposed to this view briefly while driving by the site. Additionally, the distance between the viewpoint and the project site drastically lowers viewer exposure, as the proposed solar arrays would be barely perceptible to the most intent viewers. Therefore, the proposed changes would result in a **less than significant** impact to views at KOP 1.

Viewpoint 2: Existing Conditions and Visual Simulation at KOP 2 (Excelsior Road at the Sacramento Metro Fire District Station 55)

KOP 2 is the viewpoint looking east from Excelsior Road at Sacramento Metro Fire District Station 55. It is the view looking east from Excelsior Road, adjacent to Sacramento Metro Fire District Station 55, and is approximately 1.0 mile west of the project site. The existing view and the visual simulation of the project from KOP 2 are provided in Exhibit 3.1-3 and Exhibit 3.1-4, respectively.

The foreground of this view is dominated by the asphalt roadway and low wire fencing with metal stakes. There are also utility poles and associated overhead lines which run parallel to the roadway and fencing. The topography of the view is flat, and the middleground and background are covered with undeveloped agricultural land and grasslands. Low, gently rolling hills and trees are visible in the background. The foothills of the Sierra Nevada Mountain Range are barely visible in the extreme distant background.

The vividness of KOP 2 is low due to the lack of visual diversity and contrast within this view. As with KOP 1, the roadway and adjacent agricultural land meld visually and lack distinctly memorable features and patterns. The intactness and unity of KOP 2 are moderate. This view is mostly free of nontypical visual intrusions by virtue of having relatively few built features. However, there is a lack of visual order and harmony between the natural visual environment and the built features that are present. Overall, the visual quality of KOP 2 is moderate-low based on the assessed vividness, intactness, and unity of this view.

In Exhibit 3.1-4, the simulation shows the proposed solar arrays towards the southwestern portion of the project site would be slightly visible from KOP 2. Additionally, the project may modify or replace the utility infrastructure (i.e., poles and electrical lines) visible in the foreground.

As with KOP 1, the proposed solar arrays would slightly contrast with the rural character of the visual environment at KOP 2. Visual quality may be slightly reduced by the addition of a new built feature that does not serve to complement the visual harmony of this viewpoint. The overall reduction in visual quality would be moderate-low to low.

Viewers at KOP 2 would primarily be motorists, residents, and workers (e.g., firefighters) on Excelsior Road. Motorists are anticipated to have moderate-low to low sensitivity, as they would only be exposed to this view briefly while driving by the site. However, residents of the multiple homes along Excelsior Road, as well as the firefighters of Station 55, are anticipated to be acutely familiar with the existing visual environment, and more sensitive to changes than motorists. Therefore, the viewer sensitivity of residents and workers is anticipated to be moderate to moderate-high.

While viewers at KOP 2 are anticipated to have a higher degree of sensitivity relative to those at KOP 1, the distance between this viewpoint and the proposed features is approximately one mile, and the proposed features would be barely perceptible. Glare from the proposed solar arrays poses a potential risk, as discussed under Impact 3.1-2 below. However, with regard to visual character and the quality of public views, the proposed changes would result in a **less than significant** impact to views at KOP 2.

Viewpoint 3: Existing Conditions and Visual Simulation at KOP 3 (Looking West from Eagles Nest Road)

KOP 3 is the viewpoint looking west from Eagles Nest Road. It is the view looking west from Eagles Nest Road, just north of the intersection of Eagles Nest Road and Grant Line Road. It is approximately 0.17-mile east of the project site. The existing view and the visual simulation of the project from KOP 3 are provided in Exhibit 3.1-5 and Exhibit 3.1-6, respectively.

The foreground of this view is dominated by built features, including a wire fence, wooden gate, utility poles and overhead utility lines. The topography of the view is flat, and the middle ground and background are covered with undeveloped agricultural land which appears to be used for cattle grazing. There are rows of mature trees barely visible in the distant background.

The vividness of KOP 3 is low due to the lack of visual diversity within this view. There are no bold patterns or features discernible from this view. The intactness and unity of KOP 3 are low. The built features within the foreground, such as the wooden gate in the center, appear to be in poor condition. This results in the built features acting as visual intrusions which disrupt harmony. Overall, the visual quality of KOP 3 is low based on the assessed vividness, intactness, and unity of this view.

In Exhibit 3.1-6, the simulation shows the proposed solar arrays towards the southeastern portion of the project site would be visible from KOP 3. This view represents one of the closest views of the proposed solar arrays on a publicly accessible road. Additionally, the project may modify or replace the utility infrastructure (i.e., poles and electrical lines) visible in the foreground.

As with KOPs 1 and 2, the proposed solar arrays would slightly contrast with the rural character of the visual environment at KOP 3. Visual quality may be reduced by the addition of a new built feature that intrudes on the rural characteristic of the existing visual landscape and does not serve to create a memorable or aesthetically pleasing landscape. The overall reduction in visual quality would be moderate to moderate-high.

Viewers at KOP 3 would primarily be motorists on Eagles Nest Road, and residents of one property just south of this view. Motorists are anticipated to have moderate-low to low sensitivity, as they would only be exposed to this view briefly while driving by the site. Residents of the property south of KOP 3 are anticipated to be acutely familiar with the existing visual environment, and more sensitive to changes than motorists. However, it should be noted that this property is blocked off by rows of mature trees, which would offset exposure to the proposed features. Therefore, the viewer sensitivity of residents is anticipated to be moderate.

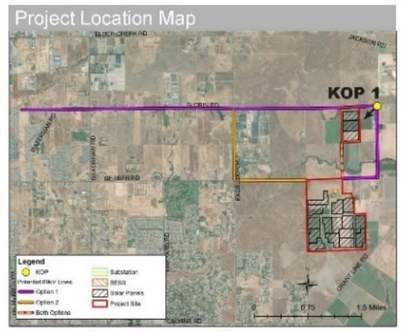
While KOP 3 represents one of the closest views of the proposed solar arrays, travelers are not anticipated to have a strong reaction to this feature. Glare from the proposed solar arrays poses a potential risk, as discussed under Impact 3.1-2 below, particularly to the residents of the aforementioned property south of KOP 3. However, with regard to visual character and the quality of public views, the proposed changes would result in a **less than significant** impact to views at KOP 3.

Oveja Ranch Solar Project

KOP 1

Existing Conditions
Looking Southwest from the intersection of
Eagles Nest Road and Florin Road

Project Location Map



Photograph Information

Time of photograph:	3:06 PM
Date of photograph:	11-18-2024
Weather condition:	Partly cloudy
Viewing direction:	Southwest
Latitude:	38°29'47.38" N
Longitude:	121°15'38.98" W
Distance to project:	0.25 mile

January 2025

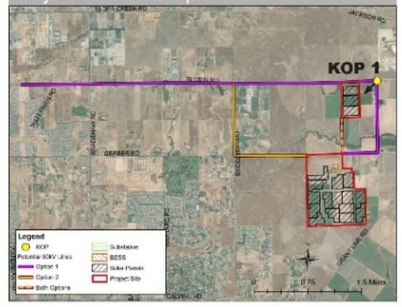
Exhibit 3.1-1. Viewpoint 1: Existing Conditions KOP 1 (Intersection of Florin and Eagles Nest roads)

Oveja Ranch Solar Project

KOP 1

Simulated Conditions
Looking Southwest from the intersection of
Eagles Nest Road and Florin Road

Project Location Map



Photograph Information

Time of photograph:	3:06 PM
Date of photograph:	11-18-2024
Weather condition:	Partly cloudy
Viewing direction:	Southwest
Latitude:	38°29'47.38" N
Longitude:	121°15'38.98" W
Distance to project:	0.25 mile

January 2025

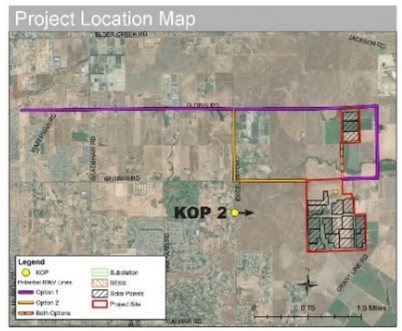
Exhibit 3.1-2. Viewpoint 1: Simulated Conditions KOP 1 (Intersection of Florin and Eagles Nest roads)

Oveja Ranch Solar Project

KOP 2

Existing Conditions
Looking East from Excelsior Road at
Sacramento Metro Fire District Station 55

Project Location Map



Photograph Information	
Time of photograph:	3:39 PM
Date of photograph:	11-18-2024
Weather condition:	Partly cloudy
Viewing direction:	East
Latitude:	38°28'30.89" N
Longitude:	121°17'51.74" W
Distance to project:	1.0 mile

January 2025

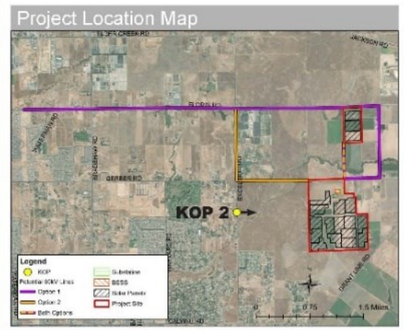
Exhibit 3.1-3. Viewpoint 2: Existing Conditions KOP 2 (Excelsior Road at the Sacramento Metro Fire District Station 55)

Oveja Ranch Solar Project

KOP 2

Simulated Conditions
Looking East from Excelsior Road at
Sacramento Metro Fire District Station 55

Project Location Map



Photograph Information

Time of photograph:	3:39 PM
Date of photograph:	11-18-2024
Weather condition:	Partly cloudy
Viewing direction:	East
Latitude:	38°28'30.89" N
Longitude:	121°17'51.74" W
Distance to project:	1.0 mile

January 2025

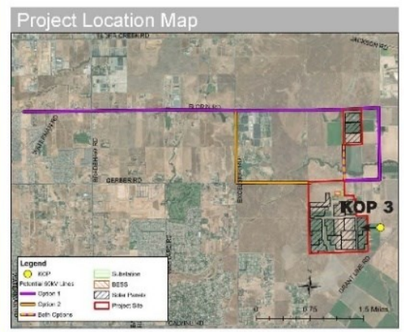
Exhibit 3.1-4. Viewpoint 2: Simulated Conditions KOP 2 (Excelsior Road at the Sacramento Metro Fire District Station 55)

Oveja Ranch Solar Project

KOP 3

Existing Conditions
Looking West from Eagles Nest Road

Project Location Map



Photograph Information

Time of photograph:	3:06 PM
Date of photograph:	11-18-2024
Weather condition:	Partly cloudy
Viewing direction:	West
Latitude:	38°28'20.38" N
Longitude:	121°15'38.75" W
Distance to project:	0.2 mile

January 2025

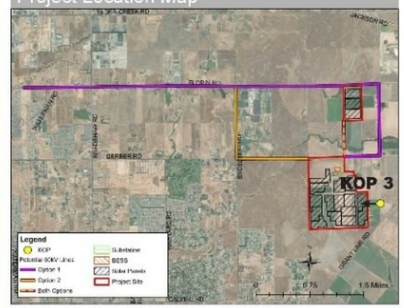
Exhibit 3.1-5. Viewpoint 3: Existing Conditions KOP 3 (Looking West from Eagles Nest Road)

Oveja Ranch Solar Project

KOP 3

Simulated Conditions
Looking West from Eagles Nest Road

Project Location Map



Photograph Information

Time of photograph:	3:06 PM
Date of photograph:	11-18-2024
Weather condition:	Partly cloudy
Viewing direction:	West
Latitude:	38°28'20.38" N
Longitude:	121°15'38.75" W
Distance to project:	0.2 mile

January 2025

Exhibit 3.1-6. Viewpoint 3: Simulated Conditions KOP 3 (Looking West from Eagles Nest Road)

Impact 3.1-2. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction

The project site is currently uninhabited, and no structures exist that would constitute a significant source of light or glare. Construction is anticipated to take approximately 18 months to two years. During this time, glare would be produced from sources such as reflective surfaces of construction vehicles and a temporary construction trailer/office complex. Additionally, temporary lighting may be required during construction. As stated in Chapter 2, "Project Description", temporary lighting used outside of permitted construction hours would be shielded and angled downwards.

There are several single-family homes adjacent to, and in the vicinity of, the project site. These residents may have views of the sky above the site, and nighttime lighting during construction may produce a detectable skyglow. If work is performed between the hours of 9:00 p.m. to 6:00 a.m., construction crews would use minimal illumination to perform the work safely. All lighting would be directed downward and shielded to focus illumination on the desired work areas only, and to prevent light spillage onto adjacent properties. No bright white lights, such as metal halide, halogen, fluorescent, mercury vapor, and incandescent lighting would be used during construction or for long-term operations. Therefore, overall impacts from lights and glare during construction would be **less than significant.**

Operation

Lighting

Nighttime lighting during operations would be minimal. As stated in Chapter 2, "Project Description", the project would include external dark sky compliant safety lighting that may include permanent lighting on the substation, entrances to the arrays, and certain array or BESS-related equipment such as medium voltage combining switchgear. Lighting at the inverters medium voltage combining switchgear and substation would generally be switched off and only switched on if maintenance is required outside of daylight hours.

Glare

Solar panels may result in some glare during the daytime. The reflection of sunlight is the primary producer of any potential glare from glass or metallic surfaces associated with the project. As opposed to other surfaces, such as mirrors, a solar panel has, at a microscopic level, an irregular surface designed to capture the incident rays of sunlight with the goal of generating additional photon collision and energy production. If not absorbed, incident radiation would be reflected. Thus, the goal of any solar panel is to trap as much of the incident rays as possible, and minimize reflection, to maximize energy

creation. The project would result in the construction of PV solar panels on approximately 400 acres.

A glare analysis was prepared for the project to determine whether the proposed PV arrays have the potential to create harmful glare (AECOM 2024). The glare analysis included potential glare receptors within the study area consisting of private roadways, public roadways, and airports. All runway approach paths and air traffic control towers associated with both Sacramento Mather Airport and Skyway Estates Airport were included in the analysis regardless of visibility or distance. The modeled receptors of the glare analysis included the following:

- Florin Road
- Unimproved Gerber Road, a two-way private dirt road that crosses from east to west between the north and south portions of the project site
- Eagles Nest Road
- Excelsior Road
- Florin Road
- Grant Line Road
- Sacramento Mather Airport (KMHR)
- Skyway Estates Airport (CL04)

As described in Chapter 2, “Project Description”, the project would include PV modules mounted on a single-axis horizontal tracking system or a fixed tilt system, or a combination of both. If a single-axis horizontal tracking system is used, the PV panels would tilt east to west, tracking the sun throughout the course of the day. A horizontal fixed-tilt system would include modules fixed at an angle of approximately 15 to 25 degrees to the south, while a vertical fixed-tilt system would include bifacial modules fixed at an angle of approximately 90 degrees pointing east-west. The glare analysis accounted for these different possibilities in its assumptions.

Fixed panels have a potential for glare in the early morning and late afternoon hours. For the most part, glare from a fixed system would be redirected to the north and high in the sky. The greatest potential for glare would occur as the sun nears due east or west as the sun’s light is parallel to the panels and would skip across the surface of the panels.

Reflected light can cause glint (a quick reflection) and glare (reflection that lasts for a longer duration), which can create hazards for pilots, air-traffic control personnel, motorists, and other potential receptors. In addition to visual hazards, glare can also result in a temporary loss of vision. The hazard level of glare depends on the ocular impact to the observer. Generally, an ocular impact is calculated as a function of the incidence

angle and the intensity of the light. For the purpose of the project's glare analysis, 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.

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

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 for the glare analysis was able to simulate the sun's progression across the sky over the course of a year and model the potential glare that could be caused by the proposed solar arrays. If glare is detected, the software then quantifies the level of ocular impact hazard and pinpoints the exact time of year the glare would occur. This analysis was automatically performed for every minute of the calendar year, for each proposed solar array, and for each potential receptor.

Modeling results demonstrated that the proposed solar panels would not result in hazardous glare from any of the proposed solar panel arrays to any of the surrounding roads, Skyway Estates Airport, or Sacramento Mather Airport. However, the glare study indicated that there would be infrequent and short-term glare with the potential to cause a temporary after-image periodically along the unimproved Gerber Road between the northern and southern areas of the project site, Florin Road, and Grant Line Road. There are no stationary receptors that would experience this glare long-term. Unimproved Gerber Road is a private road and infrequently travelled. As stated in Section 3.17.2, Florin Road serves as a significant connector between residential, commercial, and rural areas, linking to major highways like State Route (SR)-99. Grant Line Road also serves as a crucial connector between suburban and rural areas, facilitating movement around the outskirts of the metropolitan region and linking to several major highways. Motorists passing through the area quickly would not experience these periodic glare events on a regular basis, due to their infrequency and short duration. Thus, no substantial glare would be produced by the project that would adversely affect daytime views in the area.

Therefore, the project would not result in a substantial increase in lighting during operations, nor does it have the potential to create long-term or frequent hazardous glare that would substantially adversely affect daytime views for nearby receptors, as detailed in the glare analysis. Therefore, impacts from light and glare during operation would be **less than significant**.

3.2 Agriculture and Forestry Resources

This section addresses agricultural resources within the project site and surrounding areas. It describes Sacramento County's agricultural uses; identifies the extent of agricultural land on-site and within Sacramento County; and describes the factors contributing to the conversion of agricultural land to non-agricultural uses. This section also determines the significance and quality of agricultural land within the project site and evaluates potential impacts related to agricultural resources related to the implementation of the proposed project.

During scoping, SMUD received a comment letter from the California Department of Conservation (DOC), asking that type and amount and location of farmland impacts be discussed in the EIR, along with current and future agricultural uses, loss of agricultural lands from construction of project components, cumulative impacts, Sacramento County agricultural mitigation plans, and compatibility with existing Williamson Act contracts. All of these issues are addressed in this section, with the exception of cumulative impacts, which are discussed in Section 5, "Other CEQA."

3.2.1 Regulatory Setting

Federal

There are no relevant federal regulations regarding agricultural and forestry resources applicable to the proposed project.

State

California Important Farmland Inventory System and Farmland Mitigation and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established by the State of California in 1982 to continue the important farmland mapping efforts begun in 1975 by the U.S. Soil Conservation Service (now called the Natural Resources Conservation Service, under the U.S. Department of Agriculture). The intent was to produce agricultural resource maps, based on soil quality and land use across the nation. The DOC sponsors 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 the 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 2030 General Plan

The following policies in the Sacramento County General Plan (Sacramento County 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);[1]
- 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.

Policy AG-6. If a property owner is required to mitigate for the loss of farmland under Policy AG-5, and the approved master plan or community plan includes land permanently set aside for an urban farm, a 1:1 farmland credit will be given to projects that incorporate urban farming within the project that permanently preserves farmland. Urban farms may qualify for credit for the proposed master plan or community plan and will be considered as part of the master plan or community plan process subject to the following criteria:

- The required minimum urban farm size to qualify for the credit shall be at least 5 acres.
- Only land that is fully available for farming shall count towards the credit. Ancillary facilities such as education buildings, farmer's markets, and parking areas shall not be included in the acreage calculation.
- Community gardens shall not count toward the credit.
- The zoning shall be a permanent agricultural zone, or similar zone, that ensures the permanency of the agricultural use.

[1] 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.

- An appropriate source of water shall be identified and provided.
- A permanent agricultural easement shall be recorded over the site. The agricultural easement shall be dedicated to the County of Sacramento or an organization approved by the County to preserve the farmland.
- If there is a separate farm management entity, a recorded farming management agreement shall be required between the landowner and the farm manager.

Any reversion to a non-farming use on an urban farm site that received farmland credit shall trigger farmland mitigation regardless of the size. The mitigation shall be equivalent to the mitigation required at the time of the original project approval. In addition, the mitigation shall be based on the farmland category at the time of original project approval; however, in the event the farmland category has been upgraded to a higher category as shown on the latest Important Farmland Map from the Department of Conservation, that farmland category shall be used as the basis in determining equivalent mitigation.

Policy AG-10. The County shall balance the protection of prime, statewide importance, unique and local importance farmlands and farmlands with intensive agricultural investments with the preservation of natural habitat so that the protection of farmland can also serve to protect habitat.

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.

3.2.2 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 2023 was approximately $585 million. This value represents a decrease of approximately 3 percent

from the 2022 value of $602 million (Sacramento County Agricultural Commissioner 2023).

In 2023, wine grapes had the highest crop value ($205 million), with over 34 reported varieties being grown on 36,800 acres. Pears are the number two commodity at $55 million followed by milk production at $91 million, nursery stock ($39 million), processing tomatoes ($38 million), and poultry ($34 million) (Sacramento County Agricultural Commissioner 2023). The Agricultural Commissioner also noted substantial increases in 2023 crop values for seed crops (an increase of 40 percent) and walnuts (an increase of 35 percent) compared to 2022 values (Sacramento County Agricultural Commissioner 2023).

Sacramento County Farmland Conversion

The California 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 above, for detailed descriptions of important farmland classifications.)

Table 3.2-1 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 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 3.2-1). 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.

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

Table 3.2-1. 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**

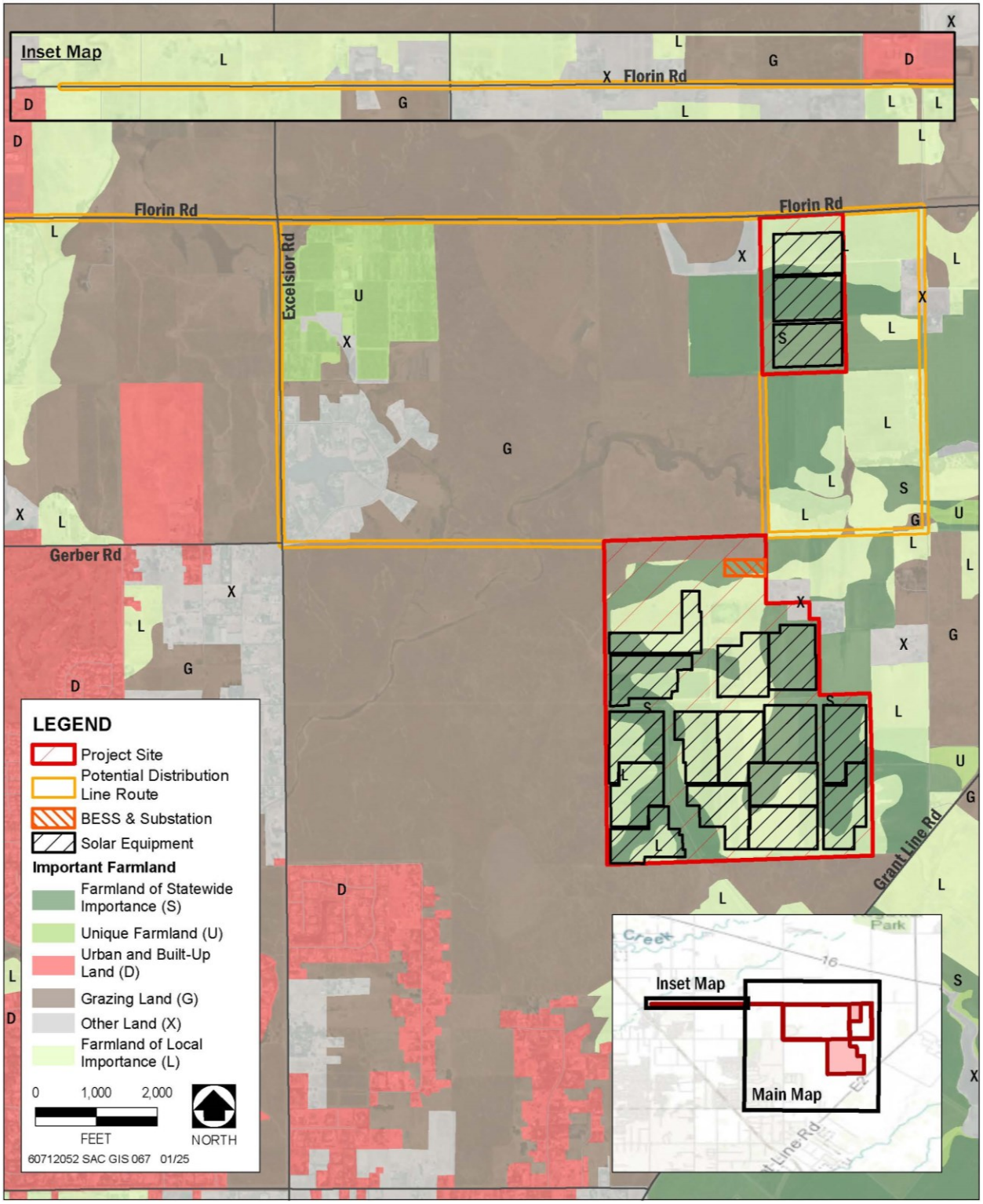
Source: DOC 2020

Project Site Agricultural Uses

The project site's current (and historical) use is agricultural production. The majority of the project site has been used for irrigated crops and forage ground for livestock. Crops have included Sudan grass and clover for seed, corn, wheat and triticale for grain, and summer and winter hay. The irrigated pasture has an average carrying capacity of seven ewes/lambs per acre. The southern area of the project site includes, in its northern extent, an area used for dry rangeland grazing.

Table 3.2-2 summarizes the DOC designated land within the project site. According to the Sacramento County Important Farmland Map, published by the California Division of Land Resource Protection (DOC 2020)[3], approximately 421 acres of the southern area are designated as Important Farmland, approximately 31.2 acres are designated as Grazing Land, and approximately 2.5 acres are classified as Other Land. The northern area consists of approximately 80 acres of Important Farmland. The potential distribution line corridor includes approximately 28.9 acres of Important Farmland, approximately 59.2 acres of Grazing Land, and approximately 19.7 acres of Other Land and Urban and Built-Up Land (DOC 2020). Exhibit 3.2-1 shows the location of agricultural land within and adjacent to the project site.

[3] The DOC Farmland Mapping and Monitoring Program (FMMP) maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance.



Source: DOC FMMP 2020

Exhibit 3.2-1. DOC Designated Land within and Surrounding the Project Site and Project Components

Table 3.2-2. Summary of DOC Designated Land within the Project Site

Category	Southern Area (acres)	Northern Area (acres)
Prime Farmland	0	0
Farmland of Statewide Importance	205.4	53
Farmland of Local Importance	215.6	27
Unique Farmland	0	0
Important Farmland Subtotal	**421**	**80**
Grazing Land	31.2	0
Agricultural Land Total	**452.2**	**80**
Other Land	2.5	0
Urban and Built-Up Land	0	0
Total[1]	**454.6**	**80**

Source: DOC 2020
DOC = California Department of Conservation
[1] Numbers may not add up exactly due to rounding.

Williamson Act

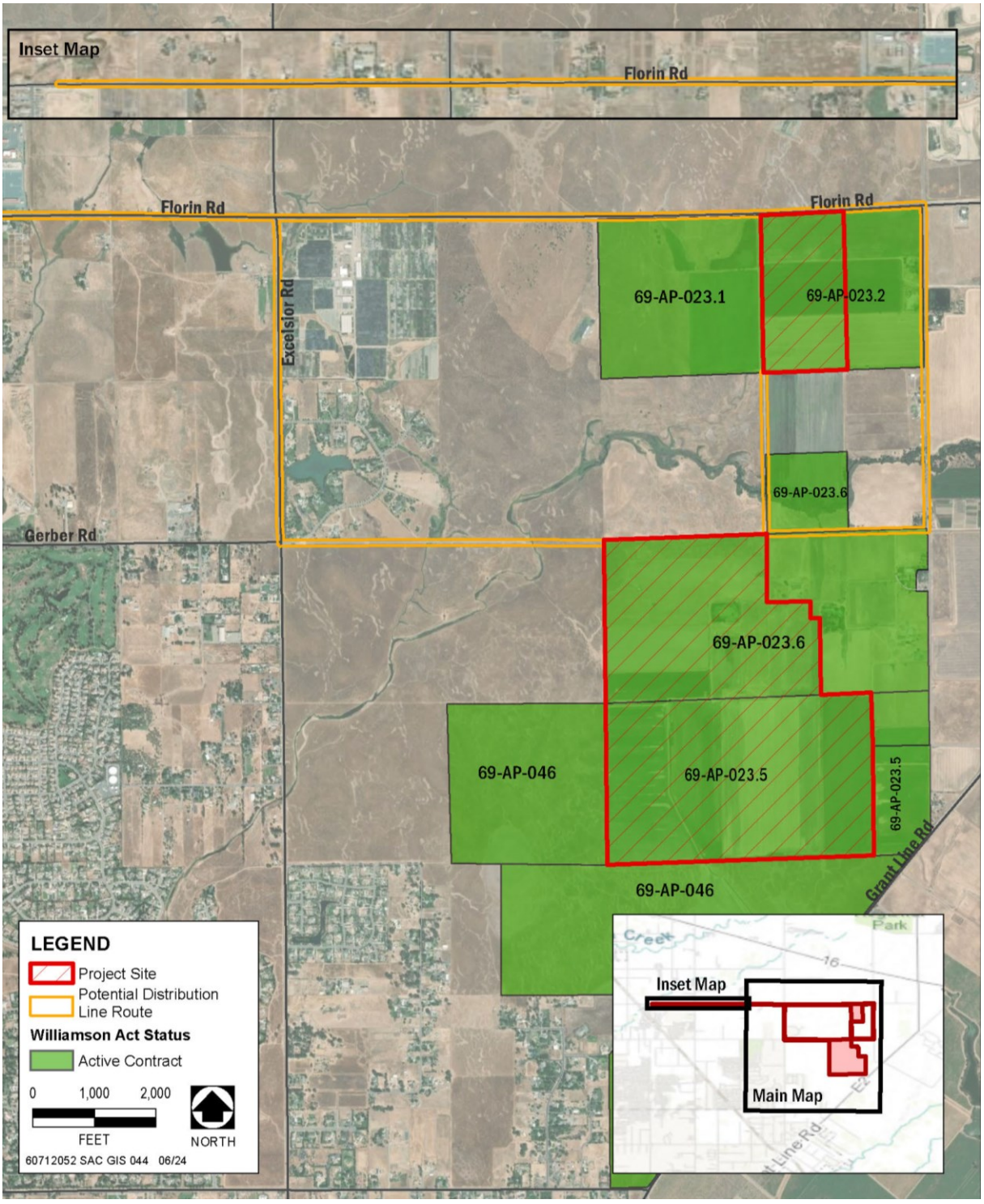
Under the California Land Conservation Act of 1965, also known as the Williamson Act, private property owners can enter into contracts with local governments to permanently protect land (within agricultural preserves) for agricultural and open space purposes and in turn earn tax benefits.

As shown in Exhibit 3.2-2, the project site includes parcels (067-0110-083, 123-0030-003, and 123-0040-001) under active Williamson Act contracts. Of the total 1,032 acres of Waegell Family land under Williamson Act contracts, approximately 534 acres are located on the project site (Table 3.2-3). The Williamson Act contracts for these parcels do not currently include photovoltaic (PV) solar development as a compatible use. However, the Waegell family would seek to amend their contracts to include solar development as a compatible use.

Table 3.2-3. Williamson Act Contracts in the Project Site

Contract Number	Total Contracted Acreage	Contracted Acreage within Project Site
69-AP-023.2 (Northern Area)	316.3	80
69-AP-023.5 (Southern Area)	318.8	263.8
69-AP-023.6 (Southern Area)	396.9	190.8
Total	**1,032.0**	**534.6**

Source: Sacramento County 2023



Source: Sacramento County 2023

Exhibit 3.2-2. Williamson Act Contract Lands within the Project Site and Adjacent Lands

Agricultural Zoning

The project site is currently zoned Agriculture 160 (AG-160) by Sacramento County, meaning a 160-acre minimum parcel size is required to qualify for this zoning. The AG-160 zoning designation is intended to eliminate encroachment of incompatible land uses with 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 in the future (Sacramento County 2024a).

Permitted uses within the AG-160 zoning designation include raising and harvesting of 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 2024a).[4] 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 2024a).[5]

The proposed project would be categorized as a Commercial II Solar Facilities by the Sacramento County Zoning Code and approval of a County Use Permit would typically be required for this use within the AG-160 zoning designation. However, the proposed project is exempt from such permitting as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities (Sacramento County 2024b).

3.2.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The Important Farmland Map for Sacramento County, produced by the DOC's Division of Land Resource Protection (DOC 2020), and Williamson Act Contract Map for Sacramento County (Sacramento County 2023) were used to evaluate the agricultural significance of the lands on the project site and assess existing Williamson Act contracts. Geographic information systems (GIS) data were used to determine the potential acreage of

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

[5] 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.

designated farmland affected by implementation of the proposed project. The 30% project design plans were used to assess affected acreage by designated farmland type.

Appendix G of the CEQA Guidelines focuses the analysis of conversion of agricultural land on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to nonagricultural uses; therefore, any conversion of these lands to a nonagricultural use would be considered a significant impact under CEQA.

Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to agricultural 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 Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]);
- result in the loss of forestland or conversion of forestland to nonforest 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 nonforest 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 or more. 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-160. The AG-160 zoning designation is intended to eliminate encroachment of incompatible land uses with 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 2024a).

The proposed project would be categorized as Commercial II Solar Facilities by the Sacramento County Zoning Code and approval of a Use Permit would typically be required for this use within the AG-160 zoning designation. However, this project is exempt from that zoning ordinance. The property's current zoning is intended to limit the encroachment of incompatible land uses with long-term agricultural use. The proposed project is designed to integrate agriculture production, including sheep grazing within the project facility. In addition, the proposed project would incorporate agricultural features such as preserving the existing farm roads and irrigation system to ensure that it remains functional to irrigate onsite and offsite during project operations. After construction is complete, the project would continue to use the land for agricultural activities through continued irrigation of the pastures within the project site for grazing and possible crop production and the potential installation of pollinator friendly vegetation. Vegetation would grow under and between the modules to prevent erosion and provide forage for sheep to graze.

Moreover, solar energy facilities, such as the proposed project, are specifically designated as a compatible use for agriculturally zoned lands under the current Sacramento County General Plan (2022), which is the foundation for zoning in the County. 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-160 and no areas zoned as forestland, timberland, or a timberland production zone are present. 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 neither contains timberland as defined by PRC Section 4526 nor 10 percent native tree cover that would be classified as forestland under PRC Section 12220(g).[6] 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.

[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 Analysis

Impact 3.2-1. 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 non-agricultural use?

The proposed project would construct, operate, and maintain a PV solar power and battery storage renewable energy generation facility. The project has been designed to preserve agricultural use including irrigation on the project site. Specifically, the 30 percent project design plans avoid all existing flood irrigation infrastructure plus a 40-foot buffer. Site grading would be conducted only as needed to avoid impacting the efficiency of the flood irrigation system to preserve its full function for irrigated pasture upon completion of construction, in coordination with the landowners. The existing (and historical) agricultural uses on the project site have included irrigated crops and forage ground for livestock. During operation of the proposed project, the project site would continue to be used for agricultural activities through flood irrigation of the pastures within the project site for forage ground, possible crop production, and the potential installation of pollinator friendly vegetation, similar to existing conditions.

As discussed above, the project site contains a total of 501 acres of Important Farmland, with 421 acres in the southern area and 80 acres in the northern area. Of this, 258.4 acres are designated as Farmland of Statewide Importance (205.4 acres in the southern area and 53 acres in the northern area) and 242.6 acres are designated as Farmland of Local Importance (215.6 acres in the southern area and 27 acres in the northern area). The proposed project anticipates long-term impacts approximately 4.1 acres of Important Farmland (0.3 acres of Farmland of Local Importance and 3.8 acres of Farmland of Statewide Importance), where the substation and BESS would be located. Farmland of Local Importance is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. As such, any potential conversion of this land would not be considered an impact under CEQA. However, per Appendix G of the CEQA Guidelines, the conversion of Farmland of Statewide Importance to a non-agricultural is a potentially significant impact under CEQA. Therefore, this impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.2-1. Preserve Farmland of Statewide Importance

SMUD shall compensate for the loss of 3.8 acres of Farmland of Statewide Importance by preserving land of the same designation at a 1:1 ratio (i.e., 1 acre on which easements are acquired to 1 acre of Farmland of Statewide Importance removed from agricultural use). SMUD shall acquire agricultural conservation easement(s) that provide in-kind resource value protection in the region, with a strong preference for locating the agricultural conservation easement(s) in Sacramento County. This can be achieved by the acquisition of conservation easement(s), farmland deed restriction, or other appropriate farmland conservation mechanism to ensure the preservation of the land in perpetuity.

The impact acreage requiring offset shall be based on the most current FMMP at the time of Sacramento County's approval of the Williamson Act contract amendment.

Significant after Mitigation

Mitigation Measure 3.2-1 (Preserve Farmland of Statewide Importance) would require SMUD to provide conservation easements or similar measures to compensate for the permanent conversion of Farmland of Statewide Importance. While no new farmland would be made available, the conversion of Farmland of Statewide Importance attributable to the proposed project (3.8 acres) would account for less than one percent (0.002 percent) of the total Important Farmland in Sacramento County. The total conversion of Farmland of Statewide Importance would be small in the context of the County's entire agricultural land base, and would not cause a substantial reduction in the County's total agricultural production. The proposed project would not be required to provide additional mitigation for conversion of farmland, as Sacramento County's General Plan Agricultural Element AG-5 requires mitigation for projects resulting in the conversion of more than fifty (50) acres. Further, at the end of the project's lease term, the project solar facilities would be completely removed, including the BESS and substation that result in the conversion Farmland of Statewide Importance and the site would be restored to its original condition, resulting in full restoration of the agricultural lands. Therefore, implementing this mitigation measure would reduce impacts resulting from the conversion of Farmland of Statewide Importance to **less than significant with mitigation**.

Impact 3.2-2. Conflict with a Williamson Act Contract?

As discussed above, the project site includes parcels (067-0110-083, 123-0030-003, and 123-0040-001) under active Williamson Act contracts. Of the total 1,032 acres of Waegell Family land under Williamson Act contracts, approximately 534 acres involve the project site (Table 3.2-3). The Williamson Act contracts for these parcels do not include PV solar development as a compatible use. As such, the property owners intend to amend their contracts to allow for solar PV facilities and BESS in conjunction with their ongoing agricultural activities. PV solar was not a foreseeable activity at the time most Williamson Act contracts were executed; however, it is becoming a frequent co-use of cultivated agricultural and grazing uses.

The purpose of Willaimson Act contracts is to preserve agricultural and open space lands. This purpose would continue as to the proposed project lands throughout the life of the project and beyond. Ongoing monitoring and reporting of agricultural activities within the solar site will continue by the landowner by way of the County's annual Agricultural Preserve Questionnaire. The annual questionnaire requests current data for each parcel regarding income, rentals, expenses and production, and property use characteristics for the type(s) of agricultural operation(s) involved.

The addition of commercial solar energy production and its supporting ancillary facilities as a defined compatible use would be consistent with the following criteria within the Williamson Act contract(s):

- The land remains zoned to an agricultural zoning classification, which for this site is AG-160; AG-160 allows for Commercial II Solar.
- The proposed solar array structures are compatible with agriculture. The proposed ancillary facilities, the substation and battery storage structures, would encompass approximately 4.1 acres, thus allowing the remainder of the site to stay in agricultural production for the life cycle of the project (and beyond, once the project is decommissioned).
- New utility, power and communication lines are already defined compatible uses within the existing contract(s).
- The proposed co-use of solar maintains the agricultural purpose of protecting the agricultural production capabilities of these agricultural lands.
- Co-locating with solar uses avoids the premature and unnecessary conversion of agricultural land to urban uses and enables the site to stay in long-term agricultural uses during operation and upon decommissioning.
- The land will remain in commercial production of agricultural commodities by continuing to use the land to raise livestock.

After amending the Williamson Act contracts to include solar PV facilities and BESS, there would be no conflicts between the proposed project and allowable uses under the Williamson Act contracts, and the purpose of the Williamson Act contracts would continue to be achieved. Therefore, this impact would be **less than significant**.

Impact 3.2-3. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

The project site potentially includes portions of Assessor's Parcel Numbers (APNs) 067-0110-083, 123-0030-003, and 123-0040-001. These parcels are actively used for agricultural production and are designated as grazing land, farmland of local importance, farmland of statewide importance, and other land, as detailed above. SMUD intends to lease 400 acres of the project site from the Waegell Family, the current landowners, and is working with the Waegell Family to maintain the longstanding agricultural use of the project site. Agrivoltaic solar farms help farmers diversify income and optimize land use while keeping the land in agricultural uses and the project is specifically designed to accommodate existing agricultural use on the project site.

SMUD would not encroach upon portions of parcels adjacent to the project site under active agricultural uses such that the parcels could become fragmented, reduced in size,

or irregularly shaped to such a degree that continuing agricultural land uses could be less profitable or otherwise less feasible. All construction staging area and access roads would be sited within the project site. To the contrary, the proposed project would be developed to support agricultural activities on neighboring properties by fencing more than the project site to ensure there is access to neighboring agricultural land and grazed pastures, and not interfering with the irrigation system and ensuring the irrigation system is functional access all areas it irrigates including areas outside the project site.

In addition, operations would not substantially increase vehicular traffic in areas where agricultural equipment uses local roads, as discussed in Section 3.17, Transportation. To the extent possible, project transportation facilitation would be limited to improving the existing earthen farm roads to provide access to the solar and BESS equipment to accommodate ongoing maintenance of these facilities and to accommodate emergency vehicles; these improvements would provide ongoing support of agricultural operations while the proposed project is active and after it is decommissioned. Therefore, the proposed project would not indirectly result in other changes in the physical environment that could result in the conversion of Farmland, including agricultural land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural uses. This impact is considered **less than significant**.

3.3 Air Quality

This section 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) provided a comment letter noting recommended approaches for the air quality impact analysis, including using the SMAQMD CEQA Guide, quantitively analyzing construction emissions, and implementing applicable operational mitigation measures if operational emissions exceed SMAQMD thresholds. SMAQMD also noted that all projects are subject to SMAQMD rules and regulations in effect at the time of construction. SMUD has considered these recommendations in preparation of the air quality analysis for the proposed project.

3.3.1 Regulatory Setting

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

Federal

The primary legislation that governs federal air quality regulations is the Clean Air Act (CAA), enacted in 1970 and amended by Congress most recently in 1990. The CAA 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.

Criteria Air Pollutants

Under the CAA, EPA has established the national ambient air quality standards (NAAQS) for six criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and particulate matter, which is subdivided into two classes based on particle size PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). 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 3.3-1[1]. These health-based

[1] Table 3.3-1 also includes the California Ambient Air Quality Standards, described further below.

Table 3.3-1. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a] Concentration [c]	National Standards[b] Primary [c,d]	National Standards[b] Secondary [c,e]
Ozone [f]	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
Ozone [f]	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	Same as primary standard
Respirable particulate matter—10 micrometers or less [g]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
Respirable particulate matter—10 micrometers or less [g]	Annual arithmetic mean	20 µg/m^3	–	Same as primary standard
Fine particulate matter—2.5 micrometers or less [g]	24 hours	–	35 µg/m^3	Same as primary standard
Fine particulate matter—2.5 micrometers or less [g]	Annual arithmetic mean	12 µg/m^3	9.0 µg/m^3	15 µg/m
Carbon monoxide	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
Carbon monoxide	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
Carbon monoxide	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide [h]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
Nitrogen dioxide [h]	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide [i]	Annual arithmetic Mean	–	0.030 ppm (for certain areas) [i]	–
Sulfur dioxide [i]	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [i]	–
Sulfur dioxide [i]	3 hours	–	–	0.5 ppm (1,300 µg/m^3)
Sulfur dioxide [i]	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead [j]	30-day average	1.5 µg/m^3	–	–
Lead [j]	Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard
Lead [j]	Rolling 3-month average	–	0.15 µg/m^3	Same as primary standard
Visibility-reducing particles [k]	8 hours	See footnote k	No national standards	No national standards
Sulfates	24 hours	25 µg/m^3	No national standards	No national standards
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	No national standards	No national standards
Vinyl chloride [j]	24 hours	0.01 ppm (26 µg/m^3)	No national standards	No national standards

Source: CARB 2024a

Notes:

µg/m^3 = micrograms per cubic meter; CARB = California Air Resources Board; EPA = U.S. Environmental Protection Agency; mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million.

a. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and 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. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b. 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 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour 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 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

c. Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°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 reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

e. *National Secondary Standards:* Levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

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

g. On February 7, 2024, the national annual $PM_{2.5}$ primary standard was lowered from 12.0 µg/m^3 to 9.0 µg/m^3. The existing national 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15.0 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

h. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from 100 ppb to 0.100 ppm.

i. On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

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

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

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

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

- **Attainment:** This designation signifies that pollutant concentrations in the area do not exceed the established standard. In most cases, a maintenance plan is required for a region after it has attained an air quality standard and is designated as an attainment or maintenance area after previously being designated as nonattainment. Maintenance plans are designed to ensure continued compliance with the standard.

- **Nonattainment:** This designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

- **Unclassified:** 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 3.3-2, the SVAB 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). The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing them will achieve ambient air quality standards. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area.

Table 3.3-2. Attainment Status for Federal and State Ambient Air Quality Standards

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

Source: SMAQMD 2024

Notes:

[a] Air quality meets the federal 1-hour ozone standard (77 Federal Register 64036, October 18, 2012). The U.S. Environmental Protection Agency (EPA) revoked this standard, but some associated requirements still apply.

Hazardous Air Pollutants / Toxic Air Contaminants

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

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

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

The CAA requires EPA to identify and set national emissions standards for HAPs to protect public health and welfare. Emissions standards are set for what are called “major

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

State

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

Criteria Air Pollutants

The CCAA, adopted in 1988, required CARB to establish California Ambient Air Quality Standard (CAAQS) (as shown above in Table 3.3-1). 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. 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). Most recently, in September 2022, CARB adopted the *2022 State Strategy for the State Implementation Plan*, describing the proposed commitment to achieve the reductions necessary from mobile sources, fuels, and consumer products to meet federal ozone and $PM_{2.5}$ standards over the next 15 years. CARB submitted the State SIP Strategy to EPA on February 22, 2023. Updates to

the SIP are underway to address the new federal $PM_{2.5}$ standard approved in February 2024.

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 2007, CARB approved the In-Use Off-Road Diesel-Fueled Fleets Regulation to reduce PM and NO_X emissions from existing off-road heavy-duty diesel vehicles. The regulation requires fleets to reduce their emissions by retiring older vehicles and replacing retired vehicles with newer vehicles, repowering older vehicles, or installing verified diesel emission control strategies in older engines; and by restricting the addition of older vehicles to fleets. The regulation was amended in November 2022 to continue the phase-out of older and lower-Tier off-road engines, restrict the addition of vehicles with Tier 3 and Tier 4 Interim engines, require the use of renewable diesel with limited exceptions starting January 1, 2024, and include additional requirements to increase enforceability, provide clarity, and provide additional flexibility for permanent low-use vehicles. Compared to the previous regulation as a baseline, the amended regulation is estimated to reduce statewide emissions from off-road diesel-fueled vehicles by approximately 31,000 tons of NO_X and 2,700 tons of PM between 2024 and 2038.

In December 2008, CARB adopted the Truck and Bus Regulation, which requires heavy-duty diesel vehicles (i.e., with a gross vehicle weight rating greater than 14,000 pounds) that operate in California to reduce exhaust TAC emissions. Under this regulation, nearly all trucks and buses are required to have 2010 or newer model-year engines, or the equivalent to, to reduce PM and NO_X emissions. In 2017, SB 1 (the Road Repair and Accountability Act of 2017) was passed, which, in addition to funding transportation-related projects, requires the Department of Motor Vehicles to refuse registration or renewal or transfer of registration for certain diesel-fueled vehicles, based on weight and model year, that are subject to specified provisions relating to the reduction of emissions of diesel particulate matter, oxides of nitrogen, and other criteria pollutants from in-use diesel-fueled vehicles. As of January 1, 2020, compliance with the CARB Truck and Bus regulation is now automatically verified by the California DMV as part of the vehicle registration process.

In March 2021, 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.

Similarly, in June 2022, in support of Executive Order N-79-20, CARB proposed the Advanced Clean Cars II Regulations requiring manufacturers of light-duty passenger cars, trucks and Sport Utility Vehicles to transition to electric zero-emission vehicles beginning with model year 2026 and phasing in of increasingly stringent requirements through 2035. By 2035, under the proposed Advanced Clean Cars II Regulations, all new

passenger vehicles sold within the state would be zero emissions. In October 2023, CARB launched a new effort to consider amendments to the regulation, including updates to the tailpipe greenhouse gas emission standard and revisions to the low-emission vehicle and zero-emission vehicle regulations.

Toxic Air Contaminants

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

TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Assembly Bill 2588; Chapter 1252, Statutes of 1987). The Air Toxics Hot Spots Information and Assessment Act seeks to identify and evaluate risks from air toxics sources, but does not regulate air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. “High-priority” facilities must perform a health risk assessment and, if specific thresholds are violated, must communicate the results to the public in the form of notices and public meetings. TACs are generally regulated through statutes and rules that require the use of MACT or BACT to limit TAC emissions.

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

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

Local

Criteria Air Pollutants

Sacramento Metropolitan Air Quality Management District

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

- **Rule 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:** Ringelmann 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 2021a). 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.

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. EPA approved the Second 10-Year PM_{10} Maintenance Plan for Sacramento County in April 2024 to demonstrate maintenance of the PM_{10} standard through 2033 (SMAQMD 2021b).

Sacramento County 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.

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

Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce CARB control measures. Under SMAQMD Rule 201 (General Permit Requirements),

Rule 202 (New Source Review), and Rule 207 (Federal Operating Permit Program), all sources that could emit TACs must obtain permits from SMAQMD. 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.

3.3.2 Environmental Setting

Ambient concentrations of air pollutants are determined by the amount of emissions released by the air pollutants sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area 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.

Climate, Topography, and Meteorology

The project site is located in the SVAB, which has a Mediterranean climate and is characterized by cool winters and hot, dry summers tempered by occasional westerly breezes from the Sacramento–San Joaquin Delta.

In general, the SVAB is relatively flat and bounded by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin 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 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 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 northerly winds, 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

A brief description of key criteria air pollutants in the SVAB and their health effects is provided below. Criteria air pollutants include ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. However, for the purposes of this analysis, criteria air pollutants of primary concern due to the regional nonattainment status (as shown in Table 3.3-2) 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 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 SFNA, which typically exhibits NO_X-limited chemistry; therefore, NO_X reductions (such as those available through reducing mobile source emissions) are more effective than ROG reductions on a tonnage basis (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 2024a). 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 CARB's *California Almanac of Emissions and Air Quality*, NO_X and ROG emissions levels in the Sacramento region 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 (EPA 2024b). 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 disease (CARB 2024b).

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

Inhalation is the most common route of exposure to NO_2. Breathing air with a high concentration of NO_2 can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, resulting in respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups (EPA 2024c).

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 2024d).

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. Particulate matter refers to a complex mixture of small solid matter and fine droplets (aerosols) made up of several components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The major area-wide sources of $PM_{2.5}$ and PM_{10} are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM_{10} include

crushing or grinding operations. $PM_{2.5}$ sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ and PM_{10} emissions. However, they are a major source of ROG and NO_X, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution.

The size of PM is directly linked to its potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, even death. The adverse health effects of PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances adsorbed onto fine PM (referred to as the "piggybacking effect"), or with fine dust particles of silica or asbestos.

$PM_{2.5}$ 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. Effects from short- and long-term exposure to elevated concentrations of $PM_{2.5}$ include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, and cancer (World Health Organization 2024). 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 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 TAC.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to even low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, hearing problems, and lower intelligence quotients. In adults, increased lead levels are associated with increased reproductive problems, decreased kidney function and cardiovascular issues (EPA 2024e). Lead poisoning can cause anemia, lethargy,

seizures, and death, although it appears that lead does not directly affect the respiratory system.

Ambient Air Quality

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 (2021 to 2023) for the criteria pollutants for which the region is in nonattainment are provided in Table 3.3-3 through Table 3.3-6. The data presented for ozone and $PM_{2.5}$ are based on monitoring results from the SMAQMD monitoring site nearest the project site at Sloughhouse, approximately 3.25 miles east of the project site. The data presented for NO_2 are based on monitoring results from the CARB monitoring site at Sacramento-Del Paso Manor, located approximately 10 miles northwest of the project site. The data presented for PM_{10} are based on monitoring results from the CARB monitoring site at Sacramento-Branch Center Road #2, located approximately 5.5 miles west of the project site.

Table 3.3-3. Summary of Ozone Monitoring Data Near the Project Site

Monitoring Metric	2021	2022	2023
Maximum 8-hour average concentration (ppm) (national/state) [a]	0.097/0.097	0.085/0.085	0.070/0.071
Maximum 1-hour concentration (ppm) (state)	0.104	0.098	0.081
Number of days national standard exceeded (8-hr average)	13	5	0
Number of days state standard exceeded (8-hr average/1-hr)	13/2	5/1	2/0

Source: CARB 2024c

Notes: ppm = parts per million

[a] State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. The State of California generally uses more stringent criteria than the U.S. government for ensuring that data are sufficiently complete for calculating valid annual averages.

Table 3.3-4. Summary of Nitrogen Dioxide Monitoring Data Near the Project Site

Monitoring Metric	2021	2022	2023
Maximum 1-hour concentration (ppb)	24.0	34.0	31.0
Number of days 1-hour standard exceeded (state)	0	0	0
Annual average (ppb)	*	5	4

Source: CARB 2024c

Notes: * = insufficient data available to determine the value; ppb = parts per billion.

Table 3.3-5. Summary of Respirable Particulate Matter (10 micrometers in diameter or less) Monitoring Data Near the Project Site

Monitoring Metric	2021	2022	2023
Maximum 24-hour concentration (µg/m^3) (national/state) [a]	57.0/58.0	55.0/54.0	48.0/50.0
Number of days national standard exceeded (measured/estimated) [b]	0/0	0/0	0/0
Number of days state standard exceeded (measured/estimated) [b]	4/25.4	1/6	0/0
Annual average (national/state) [a]	24.2/24.8	21.8/22.3	20.0/20.5
3-Year Average (national)	25/25	26/25	22/25

Source: CARB 2024c.

Notes: * = insufficient data available to determine the value; µg/m^3 = micrograms per cubic meter.

[a] State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. The State of California generally uses more stringent criteria than the U.S. government for ensuring that data are sufficiently complete for calculating valid annual averages.

[b] Measured days are those days on which an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. The number of estimated days represents a mathematical estimate of those days on which concentrations would have been greater than the level of the standard, had monitoring occurred on each day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Table 3.3-6. Summary of Fine Particulate Matter (2.5 micrometers in diameter or less) Monitoring Data Near the Project Site

Monitoring Metric	2021	2022	2023
Maximum 24-hour average concentration (µg/m^3)	190.4	26.1	33.9
Number of days national standard exceeded (measured/estimated) [a]	5/0	0/0	0/0
Annual average (µg/m^3) (national/state) [b]	8.8/*	5.7/*	5.9/5.9

Source: CARB 2024c

Notes: * = insufficient data available to determine the value; µg/m^3 = micrograms per cubic meter.

[a.] Measured days are those days on which an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. The number of estimated days represents a mathematical estimate of those days on which concentrations would have been greater than the level of the standard, had monitoring occurred on each day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

[b.] State and national statistics may differ for the following reasons: State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State statistics are based on local conditions while national statistics are based on standard conditions. The State of California generally uses more stringent criteria than the U.S. government for ensuring that data are sufficiently complete for calculating valid annual averages.

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 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 *Open File Report 2000-19: A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos,* the project site is not located within an area categorized as likely to contain NOA (California Department of Conservation 2000).

Sensitive Receptors

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

uses that are typically considered sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

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

The project site is generally surrounded by agricultural land uses. Sensitive land uses in the project vicinity include single rural residences east of the project site along Eagles Nest Road and southeast of the project site along Calvine Road and Excelsior Road. The nearest sensitive receptor to the proposed project facilities is a residence along Eagles Next Road approximately 1,000 feet east of the northern area of the proposed project, as well as additional single rural residences at least 1,100 feet from the project site boundary. There are also single-family residential neighborhoods to the southwest located approximately 0.4 mile (or more than 2,100 feet) from the southwestern corner of the project site. The nearest sensitive receptors to the proposed 69 kV lines are single family residences located adjacent to the proposed 69 kV lines along Florin Road for both Options 1 and 2, Eagles Nest Road for Option 1, and Excelsior Road for Option 2.

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.

3.3.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

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 and operational emissions were compared to SMAQMD's construction and operational thresholds. The California Emissions Estimator Model (CalEEMod) Version 2022.1.1[2] and OFFROAD2021 (v1.0.7)[3] were used to estimate emissions from construction and operation 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. For the purposes of the air pollutant emissions estimates, construction was assumed to commence in July 2026 and continue through August 2028. The first operational year of the project was assumed to be 2029.

Construction activities are anticipated to occur in phases over approximately two years. As indicated in the anticipated construction schedule that informed the construction emissions modeling, several phases would potentially overlap such that grading activities may be occurring in one area of the project site while construction activities are occurring elsewhere on the project site. This results in a conservative maximum daily emissions scenario in which all equipment for overlapping phases is assumed to be used on the same day. Construction activities would require the use of off-road equipment such as skid steer loaders, rough terrain forklifts, graders, scrapers, generators, pumps, plate compactors, tractors/loaders/backhoes, excavators, rollers, cranes, and all-terrain vehicles. During site preparation, approximately 4,350 cubic yards of excess topsoil would be exported. During grading and excavation, approximately 20,000 cubic yards of gravel, structural fill, and imported fill would be imported, while approximately 3,150 cubic yards of excess excavated soil would be exported. Paving activities assume paving of a 99,000 square-foot asphalt access road. Additionally, it was assumed that pick-up trucks used onsite during construction activities would make 10 one-mile trips per day on unpaved roads; these trips were modeled to occur over the duration of the project. Haul trucks for both imported and exported material were assumed to travel 50 miles per one-way trip. 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

[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.

[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.

water used during site preparation, grading and excavation, and construction activities would be sourced from existing on-site agricultural groundwater wells.

Operational activities would include regular inspection and maintenance activities associated with operation of the facility and would generate area, stationary, and mobile source emissions of criteria air pollutants. Area-source emissions associated with landscape/maintenance equipment and VOC off-gassing emissions from reapplication of surface coatings for the energy storage system were calculated. Stationary source emissions associated with the maintenance and testing of the two anticipated emergency generators were also calculated. Mobile source emissions account for up to 4 trips per day anticipated to result from inspection and maintenance activities. An additional 4 trips per day were also included to account for water being trucked in for panel washing.

Thresholds of Significance

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 2021a). 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 TACs that would cause an excess cancer risk level of more than 10 in in one million or exceed a noncarcinogenic[4] Hazard Index of 1; or

- result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

For cumulative impacts, SMAQMD states that, as a result of SMAQMD'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 2021a).

Impact Analysis

Impact 3.3-1. Conflict with or obstruct implementation of the applicable air quality plan?

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

Construction

Construction 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 CAAQS or NAAQS, as shown in Table 3.3-2. SMAQMD has adopted air quality plans pursuant to regulatory requirements under EPA and CARB for the attainment and maintenance of federal and state ambient air quality standards, as detailed in Section 3.3.1, "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 to achieve the NAAQS and CAAQS by the earliest practicable date. As documented in the SMAQMD CEQA Guide (SMAQMD 2021a), 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 ozone attainment plans; 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

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

emissions thresholds for PM correlate to the SMAQMD's permitting offset trigger levels[5] 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 fugitive dust from ground disturbing activities, including site preparation, grading, and travel on paved and unpaved roadways, and exhaust emissions from the use of construction equipment and operation of worker vehicles and vendor and haul trucks.

The proposed project construction-related 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 activities, implementation of best management practices would be required to use the SMAQMD non-zero thresholds of significance for PM. As detailed below in Impact 3.3-2 and shown in Table 3.3-7, emissions generated during construction could exceed the SMAQMD threshold of significance for NO_X. Therefore, the project's construction 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. 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 3.3-2 and shown in Table 3.3-8, 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, along with emergency generators, implementation of best management practices would be required to apply the SMAQMD non-zero thresholds of significance for PM. As shown in Table 3.3-8, operational emissions would not exceed the recommended SMAQMD non-zero thresholds of significance. In addition, operation

[5] 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.

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

Mitigation Measure 3.3-1a. Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction

- SMUD shall include as a condition of the construction 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 the construction activities.
    - 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.

Mitigation Measure 3.3-1b. Reduce Off-Road Equipment Exhaust-Related Emissions During Construction

- SMUD 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 if SMUD 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 3.3-3c below). Before an exemption may be considered by SMUD, 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.

Mitigation Measure 3.3-1c. Submit Construction Emissions Control Plans

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

The Construction Emissions Control Plan shall cover all construction activities and include the following:

- 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 throughout the construction duration. If any new equipment is added after submission of the inventory, the contractor shall notify the SMAQMD and SMUD 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 and SMUD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.

- 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) throughout the construction duration.

- 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 SMUD prior to the use of such equipment and trucks. The emissions calculations shall be calculated using 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.

Mitigation Measure 3.3-1d. Off-Site Construction Mitigation

If, based upon the incorporation of all measures described above in Mitigation Measures 3.3-1a through 3.3-1c, NO_X emissions still exceed the daily SMAQMD threshold for NO_X, the project shall participate in the SMAQMD's

Off-site Mitigation Program by paying to SMAQMD a mitigation fee for construction activities, to be determined at the time of construction based on the submitted equipment inventories and heavy-duty truck activity and emissions calculations for NO_X emissions, such that emissions are reduced to less-than-significant. The fee calculation to mitigate daily emissions shall be based on the most recent SMAQMD mitigation fee rate at the time of calculation, which is reviewed and adjusted annually. 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 needed to reduce emissions to be less than the SMAQMD thresholds of 85 pounds per day for NO_X. The fee shall be submitted for approval by SMAQMD as the total required to achieve emissions reductions that would reduce total emissions to less-than-significant after all other mitigation measures are implemented. The fee shall be calculated, approved by SMAQMD, and paid by SMUD prior to SMUD's approval of grading or improvement plans to the construction contractor.

Mitigation Measure 3.3-1e. Implement Best Management Practices for Reducing Operational PM Emissions

- As part of the operations bid package, SMUD shall include the following best management practice requirements 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

Mitigation Measure 3.3-1a 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 3.3-1b 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 3.3-2 in Table 3.3-9, based on implementation of Mitigation Measures 3.3-1a and 3.3-1b. As shown in Table 3.3-9, estimated emissions of NO_X would still exceed SMAQMD's thresholds of significance. Mitigation Measure 3.3-1c 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 3.3-1d would require participation in the SMAQMD's off-site mitigation fee program through the purchase of the required offsets needed based on the SMAQMD's offset mitigation fee program and would ensure that NO_X emissions would be offset to a level that would not exceed the SMAQMD thresholds of significance for NO_X. Therefore, with implementation of Mitigation Measures 3.3-1a through 3.3-1d, the project's construction emissions would be reduced to a level below the thresholds of significance and would not conflict with air quality plans applicable to the SMAQMD. This impact would be **less than significant with mitigation.**

Operations

As described below under Impact 3.3-2, 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 3.3-1e would be required to utilize the SMAQMD's non-zero thresholds. With implementation of Mitigation Measure 3.3-1e, best management practices would be implemented such that the project's operational PM emissions associated with routine maintenance activities would be reduced to a level below the non-zero thresholds 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 3.3-2. Result in a cumulatively considerable net increase of any criteria air 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

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

The project's maximum daily and annual emissions associated with construction activities are presented below in Table 3.3-7 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 3.3-1a above) to ensure compliance.

Table 3.3-7. Summary of Maximum Unmitigated Daily and Annual Construction-Related Emissions of Criteria Air Pollutants and Precursors

Description	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} [a] (lbs/day)	$PM_{2.5}$ [a] (lbs/day)	PM_{10} [a] (tons/year)	$PM_{2.5}$ [a] (tons/year)
Construction Emissions	**85.4**	**320.3**	**62.6**	**20.9**	**7.8**	**1.7**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	**Yes**	No	No	No	No

Notes: NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; lbs = pounds; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District.

[a] Fugitive dust emissions include implementation of fugitive dust BMPs consistent with SMAQMD Rule 403 requirements (watering 2x daily and limiting vehicle speeds on unpaved roads to 15 miles per hour).

As shown in Table 3.3-7, the project's maximum daily construction emissions would exceed SMAQMD's recommended threshold for NO_X, an ozone precursor. This level of emissions would result in a potentially significant impact due to the region's non-attainment status for ozone. The SMAQMD thresholds of significance are considered the allowable amount of emissions each project can generate without resulting in a cumulatively considerable net increase of criteria air pollutants and precursor emissions. Consequently, because construction of the project could generate construction-related emissions that exceed the SMAQMD-recommended thresholds, this impact for the construction phase of the project would be **potentially significant**.

Operations

Operational emissions would result from daily routine and maintenance activities, such as routine inspections and panel washing, and intermittent usage and testing of emergency generators. Operational emissions sources would include one worker passenger vehicle trip per day and one maintenance vehicle trip every two weeks for operations and maintenance activities and potential temporary use of emergency generators. Panel washing would be infrequent, estimated to occur for up to once per year for approximately three weeks (i.e., 15 days). Operational activities would typically be limited to two daily worker trips, but could include days of concurrent maintenance activities, in which maximum daily emissions would be greater than usual. For the purposes of estimating the maximum daily emissions, it was assumed that vehicle trips associated with worker passenger vehicles, heavy-duty maintenance trucks, and water trucks for panel washing could be required on a single day. Maximum daily emissions (in pounds per day) and annual emissions (in tons per year) are presented in Table 3.3-8.

Table 3.3-8. Summary of Unmitigated Maximum Daily and Annual Operational Emissions of Criteria Air Pollutants and Precursors

Emissions Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} [a] (lbs/day)	$PM_{2.5}$ [a] (lbs/day)	PM_{10} [a] (tons/year)	$PM_{2.5}$ [a] (tons/year)
Emissions[b]	**2.3**	**10.5**	**0.6**	**0.5**	**0.01**	**0.005**
SMAQMD Threshold of Significance	65	65	80	82	14.6	15
Threshold Exceeded?	No	No	No	No	No	No

Notes: lbs = pounds; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District.

[a] Fugitive dust emissions include implementation of fugitive dust BMPs consistent with SMAQMD Rule 403 requirements (watering 2x daily and limiting vehicle speeds on unpaved roads to 15 miles per hour).

[b] Maximum daily emissions conservatively assume operation of two emergency generators for 24 hours per day, which would be anticipated to occur infrequently. Actual anticipated operation of the emergency generators would be limited to a few hours intermittently throughout the year for testing and maintenance activities or in the event of power outages.

As shown in Table 3.3-8, maximum daily 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

Mitigation Measure 3.3-2. Implement Mitigation Measures 3.3-1a (Implement Basic Construction Emission Control Practices [Best Management Practices] and Enhanced Fugitive PM Dust Control Practices during Construction), 3.3-1b (Reduce Off-Road Equipment Exhaust-Related Emissions During Construction), 3.3-1c (Submit Construction Emissions Control Plans), 3.3-1d (Off-Site Construction Mitigation), and 3.3-1e (Implement Best Management Practices for Reducing Operational PM Emissions).

Significance After Mitigation

Construction

Project construction activities would result in NO_X emissions that would exceed the SMAQMD-recommended threshold of significance, as shown in Table 3.3-7. Mitigation Measure 3.3-1a 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 3.3-1b 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 3.3-9, based on implementation of Mitigation Measures 3.3-1a and 3.3-1b.

Table 3.3-9. Summary of Mitigated Maximum Daily and Annual Construction-Related Emissions of Criteria Air Pollutants and Precursors

Description	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} [a] (lbs/day)	$PM_{2.5}$ [a] (lbs/day)	PM_{10} [a] (tons/year)	$PM_{2.5}$ [a] (tons/year)
Construction Emissions	**60.5**	**122.1**	**66.3**	**11.1**	**7.1**	**1.1**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	**Yes**	No	No	No	No

Notes: NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; lbs = pounds; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District.

[a] Fugitive dust emissions include implementation of fugitive dust BMPs consistent with SMAQMD Rule 403 requirements (watering 2x daily and limiting vehicle speeds on unpaved roads to 15 miles per hour).

As shown in Table 3.3-9, Mitigation Measures 3.3-1a and 3.3-1b would reduce NO_X emissions associated with project construction; however, even with inclusion of these mitigation measures, emissions of NO_X would still exceed SMAQMD's threshold of significance. As such, Mitigation Measure 3.3-1c 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 3.3-1d would require participation in the SMAQMD's off-site mitigation fee program and ensure that NO_X emissions would be offset to a level that would not exceed the SMAQMD threshold of significance for NO_X. Therefore, with implementation of Mitigation Measures 3.3-1a through 3.3-1d, 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 routine inspections and panel washing, and intermittent usage and testing of emergency generators. 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 3.3-8. Mitigation Measure 3.3-1e would ensure compliance with the applicable operational best management practices to reduce PM emissions. With implementation of Mitigation Measure 3.3-1e, this impact for operation would be **less than significant with mitigation**.

Impact 3.3-3. Expose sensitive receptors to substantial pollutant concentrations?

As detailed in Section 3.3.2, "Environmental Setting," under "Sensitive Receptors," the project site is generally surrounded by agricultural and industrial land uses. Sensitive land uses in the broader vicinity of the project site include single rural residences located east of the project site along the Eagles Nest Road and southeast of the project site along Calvine Road and Excelsior Road. The nearest sensitive receptor to the proposed project facilities is a residence along Eagles Nest Road approximately 1,000 feet east of the northern area of the proposed project. There are also single-family residential neighborhoods southwest of the project site located approximately 2,100 feet from the southwestern corner of the project site. The nearest sensitive receptors to the proposed 69 kV lines are single family residences located adjacent to the proposed 69 kV lines along Florin Road for both Options 1 and 2, Eagles Nest Road for Option 1, and Excelsior Road for Option 2.

Construction-Related TAC Emissions

Construction of the proposed project would generate emissions of TACs from a variety of sources, including the use of off-road construction equipment, on-site generators, and on-road vehicles. These activities may expose nearby receptors to TACs, including residents east and southeast of the project site. As described above, the nearest sensitive receptors include a single rural residence along Eagles Nest Road approximately 1,000 feet east of the northern area of the proposed project, as well as additional single rural residences at least 1,100 feet from the project site boundary. The nearest sensitive receptors to the proposed 69 kV lines are single family residences located adjacent to the proposed 69 kV lines along Florin Road for both Options 1 and 2, Eagles Nest Road for Option 1, and Excelsior Road for Option 2.

The greatest potential for TAC emissions during construction would be related to DPM emissions associated with use of heavy-duty construction equipment. More than 90 percent of DPM is less than 1 micrometer in diameter, and thus is a subset of $PM_{2.5}$ (CARB n.d.). Therefore, exhaust PM_{10} is conservatively used as the upper limit for DPM emissions associated with construction of the proposed project.

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). As described above, construction activities were modeled to occur over a two-year duration with potential overlapping construction phases modeled to occur on a worst-case day. While construction activities may overlap, such activities would be geographically dispersed throughout the 400-acre construction area of the project site. The Northern and Southern Areas are approximately 80 and 454 acres in area, respectively; construction equipment and vehicle use would occur throughout these areas, rather than solely along the project site boundaries that are closest to off-site sensitive receptors. In other words, construction equipment and vehicle use would occur at distances between 1,000 feet (with limited construction activity at the project site boundary) and up to 10,900 feet away from off-site sensitive receptors. In addition, concentrations of mobile-source DPM emissions are typically reduced by approximately 70 percent at a distance of around 500 feet (CARB 2005). Construction would vary in activity and equipment intensity over that time and would take place throughout the project site and along the 69 kV line installation, thereby limiting the amount of time that emitting equipment would be along the project site perimeters, closest to off-site residences. Even during the most intensive construction periods, maximum daily unmitigated emissions of exhaust PM_{10} would be approximately 15 pounds per day, and this accounts for emissions from overlapping phases (i.e., construction of various components throughout the entire project site), not concentrated at a single location. As noted above, concentrations of mobile-source DPM emissions reduce substantially within several feet of the emissions source. Furthermore, the level of peak emissions (i.e., approximately 15 pounds per day of exhaust PM_{10}) accounts for peak construction activity that may occur intermittently but would not occur throughout the entire construction duration, as well as accounts for emissions generated by equipment and vehicles that would serve the entire project site and would not be concentrated proximate to a single sensitive receptor. While diesel-powered trucks would likely support material haul and delivery during construction, these activities would be associated with trips to and from the project site and 69 kV line installation and would not be concentrated in any one location for an extended period of time. As discussed in Impact 3.3-2, Mitigation Measure 3.3-1b would require the use of Tier 4 Final off-road equipment, which would reduce exhaust PM_{10} emissions by 75 percent compared to the unmitigated emissions. Thus, on-site emissions of exhaust PM would be reduced, which would result in a proportional reduction in DPM emissions and exposure of nearby residences to DPM. Project construction would also be required to comply with all applicable SMAQMD rules and regulations, including idling restrictions. Due to the intermittent and temporary nature of construction activities at any given location and the dispersive properties of TACs,

temporary construction activities would not expose sensitive receptors to substantial TAC concentrations. As a result, this impact would be **less than significant.**

Operational TAC Emissions

As described above in Impact 3.3-2, operational activities would include vehicle trips associated with routine maintenance and inspection activities, intermittent use of emergency generators, and vehicle trips associated with panel washing. Emissions modeling of the most intensive operations and maintenance scenario, assuming several operational and maintenance activities were to occur simultaneously on the same day, which is not likely, resulted in estimated operational emissions that would be less than one pound per day exhaust PM_{10}. The majority of these emissions would be generated by vehicle travel occurring off-site from trips to and from the project site, and the use of equipment throughout the project site, not proximate to the project site perimeter and nearby residences. Emergency generators would be installed at the proposed substation for project operations. However, emergency generators would be required to comply with SMAQMD permitting regulations for stationary sources, use would be limited to backup requirements and would not be a permanent source of new on-site emissions, and the siting would be more than 0.4 miles west from the nearest residence along Eagles Nest Road. These 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 3.3-1e would further reduce operational TAC emissions.

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 Section 3.3.2, “Environmental Setting”, exposure to criteria air pollutants can result in adverse health effects. The proposed project would primarily generate criteria air pollutant emissions during the construction phase, and the primary pollutants of concern would be ozone precursors (ROG and NO_X) and PM. Adverse health effects induced by regional criteria pollutant emissions generated by the proposed project (ozone precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, ozone precursors (ROG and NO_X) contribute to the formation of ground-borne ozone on a regional scale, where emissions of ROG and NO_X generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollutant may be transported over long distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure

to increased ozone or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project.

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

In 2020, SMAQMD published Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District (SMAQMD 2020), which provides a screening level analysis estimating the health effects of criteria air pollutants and their precursors, as well as provides guidance for conducting a health effects analysis of a project that 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 eight 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 3.3-7, construction-related emissions associated with the proposed project would exceed the SMAQMD threshold of significance for NO_X. NO_X emissions associated with project construction activities would be approximately 3.8 times the threshold and after implementation of Mitigation Measure Measures 3.3-1a and 3.3-1b, daily NO_X emissions during construction would be approximately 1.4 times the threshold. 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; 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 6.4 miles north of the proposed project site, emitting 85 pounds per day of ROG, 321 pounds per day of NO_X, and 21 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 0.15 premature deaths per year or a 0.00051 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 3.3-1a and 3.3-1b, which would reduce the project's construction-related emissions of criteria air pollutants. Daily emissions of ROG, NO_X, and $PM_{2.5}$ would be reduced to approximately 61, 122, and 11 pounds, respectively. 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 two-year 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 would be **less than significant.**

Naturally Occurring Asbestos

As described above in "Toxic Air Contaminants", according to the California Department of Conservation *Open File Report 2000-19: A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* the

project site is not located within an area categorized as likely to contain NOA (California Department of Conservation 2000). Therefore, this impact for constructed-related asbestos exposure is considered **less than significant.**

Impact 3.3-4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Sources that may emit odors during construction activities include exhaust from diesel construction equipment and heavy-duty trucks, which could be considered offensive to some individuals. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site. The project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Project operation would also not add any new sources of odors. Typical types of operations that emit objectionable odors include large large-scale facilities such as rendering plants, composting facilities, composting facilities, wastewater treatments. The land uses associated with the project are utility-related and would not include the use of large generators of other odor emissions. While the proposed project would integrate agricultural irrigation production including sheep grazing, this is an existing activity at the project site and would not result in a new source of odorous emissions. As a result, the project would not create objectionable odors affecting a substantial number of people and there would be **no impact**.

3.4 Biological Resources

This section addresses impacts on biological resources known from or with potential to occur in the project site. The analysis includes a description of the existing environmental conditions at the site at the time of publication of the NOP, the methods used for site and impact assessment, the impacts associated with implementing the proposed project, and mitigation measures proposed to reduce potentially significant impacts, where necessary. This section also includes a brief overview of the federal, State, and local laws and regulations pertaining to the protection of biological resources in Sacramento County.

The biological resources information presented in this section is based on information gathered from biological resources databases, including the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2024a), Biogeographic Information and Observation System (BIOS), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2024a); aerial photography interpretation; an official species list obtained from the U.S. Fish and Wildlife Service Information, Planning, and Conservation System (IPaC) (USFWS 2024a), USFWS Critical Habitat Viewer (USFWS 2024b); the South Sacramento Habitat Conservation Plan (SSHCP); and the results of technical studies conducted for the proposed project:

- Aquatic Resources Delineation Report prepared by AECOM dated September 2024 (Appendix BR-1).
- Biological Resources Survey Report prepared by AECOM dated September 2024 (Appendix BR-2).

Comments received in response to the NOP were reviewed during preparation of the EIR. The CDFW provided a comment letter reiterating a number of CEQA requirements and requested that specific details pertaining to the environmental setting and potential impacts on biological resources be included in the EIR. The comment letter also recommends including mitigation measures that cover fully protected species, species of special concern, sensitive plant communities, nesting birds, and habitat revegetation and restoration efforts. This comment letter also states that CDFW recommends fish and wildlife species be allowed to move out of harm's way on their own volition, and that CDFW generally does not support translocation of species. Finally, this comment letter provides specific language for mitigation measures to avoid and minimize impacts to various species and resources, including Swainson's hawk, tricolored blackbird, burrowing owl, rare plants, and aquatic resources.

The Defenders of Wildlife also provided a comment letter, requesting that the EIR provide information on potential project impacts related to white-tailed kite and permanent conversion of habitat. This comment letter also requests the use of native plants and seed mixes during revegetation efforts, and that dark sky provisions be complied with. Finally, this comment letter requests that SMUD continue to consult with resource agencies (i.e., CDFW and USFWS) during the CEQA process.

SMUD has reviewed and considered information provided in all scoping comments received during preparation of this section.

3.4.1 Regulatory Setting

Federal

Endangered Species Act, 16 U.S.C. Section 1531 et seq

Pursuant to the federal Endangered Species Act (ESA) (16 United States Code [U.S.C.] Section 1531 et seq.), U.S. Fish and Wildlife Service (USFWS) has regulatory authority over species listed or proposed for listing as endangered or threatened. USFWS and the National Marine Fisheries Service (NMFS) have authority over projects that may result in take of a species listed as threatened or endangered under ESA (i.e., a federally listed species). In general, persons subject to 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 Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

The take prohibition of ESA Section 9 applies only to listed species of fish and wildlife. Section 9(a)(2)(B) describes federal protection for endangered plants. In general, ESA does not protect listed plants located on nonfederal land (i.e., areas not under federal jurisdiction), unless such species are already protected by state law.

Section 7 of the ESA outlines procedures for federal interagency cooperation to protect and conserve federally listed species. Section 7(a)(2) requires federal agencies to consult with USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroying or adversely modifying designated critical habitat.

For projects without federal action where take of a listed species may occur, a project proponent may seek an incidental take permit under section 10(a) of the ESA. Section 10(a) of ESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a habitat conservation plan that ensures minimization and mitigation of impacts associated with the take.

Clean Water Act, 33 U.S.C. Section 1251 et seq.

Section 404 Permit Program

Section 404 of the Federal Clean Water Act (CWA) requires a project applicant to obtain a permit from the U.S. Army Corps of Engineers (USACE) before engaging in any activity

that involves any discharge of dredged or fill material into waters of the United States (WUS), including wetlands. Fill material is material placed in WUS where the material has the effect of replacing any portion of a WUS with dry land or changing the bottom elevation of any portion of a WUS. WUS include navigable waters; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; tributaries to any of these waters, and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of CWA pending USACE and U.S. Environmental Protection Agency (EPA) review.

As part of the review of a project, USACE must ensure compliance with applicable federal laws, including EPA's Section 404(b)(1) Guidelines. USACE regulations require that impacts to WUS are avoided and minimized to the maximum extent practicable, and that unavoidable impacts are compensated (33 Code of Federal Regulations [CFR] 320.4[r]).

Section 401 Water Quality Certification

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine Regional Water Quality Control Boards (RWQCBs).

Migratory Bird Treaty Act, 16 U.S.C. Section 703, et seq.

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. Section 703, et seq.), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA can be found in Title 50 of the CFR, Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The BGEPA provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle … [or any golden

eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

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

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

State

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. Under CESA, project-related impacts of the authorized take must be minimized and fully mitigated, and adequate funding to implement those mitigation measures and monitor compliance with and the effectiveness of the measures must be ensured. Standard CESA issuance requirements can include land acquisition, permanent protection and management, and/or funding in perpetuity of compensatory lands.

A "take" of a species under CESA is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include "harm" or "harass" as is included in the federal act. As a result, the threshold for a take under CESA may be higher than under ESA because habitat modification is not necessarily considered take under CESA. The take of State-listed species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. The State has the authority to issue an incidental take permit under California Fish and Game Code Section 2081, or to coordinate with USFWS during the Section 10(a) process to make the federal permit consistent with CESA.

As under federal law, listed plants have considerably less protection than fish and wildlife under California State law. The California Native Plant Protection Act (California Fish and Game Code Section 19000 et seq.) allows landowners to take listed plant species from, among other places, a canal, lateral ditch, building site, or road, or other right-of-way,

provided that the owner 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.

Section 1602 of the California Fish and Game Code

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 California Fish and Game Code. 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.

"Stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

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. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. 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 (WOS)." WOS are 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 under the Porter Cologne Act provided they meet the definition of WOS. Mitigation requiring no net loss of wetlands functions and values of WOS is typically required by the RWQCB.

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

Four sections of the California Fish and Game Code (Fish and Game Code Sections 3511, 4700, 5050, and 5515) list 37 fully protected species. These statutes prohibit take or possession at any time of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those 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 Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations include destruction of active nests because of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young. These violations can be caused by disturbance of nesting pairs by nearby human activity.

Local

Sacramento County 2030 General Plan

The *Sacramento County General Plan* Conservation Element (Sacramento County 2017) includes numerous policies that may be applicable to resources affected by the proposed project. While the proposed project is not subject to obtaining a Conditional Use Permit from Sacramento County, SMUD aims to be consistent with local conservation goals and policies. The following policies are used as guidance:

Habitat Mitigation

- **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:
    - vernal pools,
    - wetlands,
    - riparian,
    - native vegetative habitat, and
    - special status species habitat.
- **Policy CO-61:** Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

Habitat Protection and Project Review

- **Policy CO-74:** Evaluate feasible on-site alternatives early on in the planning process and prior to the environmental review process that reduce impacts on wetland and riparian habitat and provide effective on-site preservation in terms of minimum management requirements, effective size, and evaluation criteria.

Protection of Special-Status Species Habitat

- **Policy CO-75:** Maintain viable populations of special status species through the protection of habitat in preserves and linked with natural wildlife corridors.

Riparian Habitat

- **Policy CO-88:** Where removal of riparian habitat is necessary for channel maintenance, it will be planned and mitigated so as to minimize unavoidable impacts upon biological resources.

- **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.

Native Vegetation Protection, Restoration, and Enhancement

- **Policy CO-137:** Mitigate for the loss of native trees for road expansion and development consistent with General Plan policies and/or the County Tree Preservation Ordinance.

Landmark and Heritage Tree Protection

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

- **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.

Sacramento County Tree Preservation Ordinance

Sacramento County's tree preservation ordinance (Chapter 19.04 of the Sacramento County Code) requires a tree removal permit for the removal of any native oak with a single trunk measuring 6 inches or greater in diameter at breast height (dbh) or a multiple-trunked tree with an aggregate dbh measuring 10 inches or greater. This ordinance also prohibits grading, trenching, or filling any area within the dripline of a native oak unless the project proponent first obtains a permit. SMUD is not subject to these local permitting requirements, and the proposed project is designed to avoid any tree removal. Information about the ordinance is included here to acknowledge the County's conservation goals.

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."

This ordinance does not apply to the proposed project because SMUD is not obtaining a permit from the County that would fall under this ordinance; however, it is included here to acknowledge the County's Swainson's hawk conservation goals.

South Sacramento Habitat Conservation Plan

Sacramento County and partnering jurisdictions and agencies (i.e., City of Rancho Cordova, City of Galt, Sacramento County Water Agency, Sacramento Area Sewer District, and the Capital Southeast Connector Joint Powers Authority) collaboratively developed and adopted the SSHCP in February 2018. The SSHCP plan area encompasses 317,656 acres that are bordered by Highway 50 on the north, San Joaquin County on the south, El Dorado County and Amador County to the east, and the Sacramento River to the west, and includes the City of Galt and most of the City of Rancho Cordova.

The SSHCP is intended to provide a streamlined process for incidental take authorization under ESA and CESA, permitting under Section 404 of the CWA and water quality certification under Section 401 of the CWA, and Lakebed and Streambed Alteration Agreements (LSAAs) under Section 1602 of the Fish and Game Code. The SSHCP provides strategies to conserve habitat for special-status plant and wildlife species that are covered under the plan. This plan serves as a multi-species, multi-habitat conservation plan addressing the biological impacts of future urban development within the Urban Services Boundary in the southern portion of the county. Twenty-eight plant and wildlife species, and their natural habitats, are conserved under the plan. All of the special-status species that could be affected by this project, except grasshopper sparrow, are covered species in the SSHCP: vernal pool tadpole shrimp, vernal pool fairy shrimp, California tiger salamander, western spadefoot, western pond turtle, tricolored blackbird, western burrowing owl, Swainson's hawk, white-tailed kite, northern harrier, loggerhead shrike, and American badger. The project site is within the Urban Development Area (UDA) of the SSHCP, within Preservation Planning Unit 3. SMUD is not a participating entity of the SSHCP and has determined, in coordination with Sacramento County, that they would not seek coverage under the SSHCP by becoming a special participating entity. 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.

3.4.2 Environmental Setting

The project site is located within the northern portion Great Central Valley Geographic Region, within the Sacramento Valley Subregion (JFP 2023). This region supports a variety of grassland, riparian, wetland, woodland, and vernal pools habitats, however much of the Sacramento Valley has been converted to agriculture, including most of the land in the project site and surrounding area.

The project site is located within the Mediterranean California (Land Resource Region C) sub-region of the Arid West Region, which is characterized by relatively warm, wet winters and dry summers, with most of the precipitation falling between November and April (USACE 2008). Rainfall averages approximately 18.15 inches annually, with most of the precipitation occurring from December to March (WRCC 2024).

Surrounding land uses immediately adjacent to the project site include agricultural fields and existing open space preserves with seasonal wetland, riparian, and annual grassland vegetation. Along Florin Road to the east of the site, there is an industrial business complex that contains two building materials suppliers (Triangle Rock Products and Vulcan Materials Company), an agricultural wholesaler, Lopez AG Services, and Sacramento Compost. To the west of the project site along Florin Road, there is a wholesale plant nursery. Approximately 0.5 mile to the west, east, and southwest of the project site there are low-density residential developments (Birch Ranches, Gorman Acres, Sheldon Hills).

The project site is in the Elder Creek (Hydrological Unit Code [HUC] 180201630401), Laguna Creek (HUC 180201630403), and Lower Deer Creek Watersheds (HUC 180400130503; EPA 2024). The hydrology consists of combination of natural and artificial sources. There are no streams reported in the northern or southern areas of the project site where the PV solar panels, battery energy storage system (BESS), substation, and associated infrastructure would be installed. However, the southern area supports three canal ditches and Frye Creek is just west of northern area. Three named streams overlap the powerlines portion of the study area: Laguna Creek, Frye Creek, and Gerber Creek.

Land Cover and Habitat Types

Mapping of land cover types on the project site was completed by AECOM biologists and wetland ecologists, during reconnaissance-level biological resources survey of the project area on January 10 through January 12, 2024, February 16, 2024, May 7, 2024, and June 10, 2024. Mapping was conducted using a Global Navigation Satellite System (GNSS) Trimble R1 connected to a smartphone or tablet using the Esri Field Maps application to collect spatial, tabular and photographic data. WUS, including wetlands, were mapped during an aquatic resource delineation survey, conducted in tandem and on the same dates as the biological resources survey. Vegetation communities and other land cover types in the study area were documented using the SSHCP guidance for consistency, even though the proposed project is not seeking coverage under the SSHCP. The Manual

of California Vegetation was used to describe sensitive vegetation communities to the alliance level, when possible (CNPS 2024b).

The predominant land cover type on the project site is cropland. Six terrestrial land cover types — cropland, irrigated pasture, roads/disturbed/developments, valley grassland, riparian, and blackberry thickets — were mapped on the project site and are described below. Additionally, ten riverine and palustrine aquatic feature types — agricultural ditch, roadside ditch, perennial stream, ephemeral stream, and intermittent stream, reservoir (open water), vernal pool, freshwater marsh, seasonal wetland, and swale — were identified on the project site and are described below. The acreage of each land cover type and aquatic feature type within the project site is provided in Table 3.4-1 and Table 3.4-2, respectively and their location and extent in the project area are shown in Exhibit 3.4-1 through Exhibit 3.4-5.

Table 3.4-1. Land Cover Types on the Project Site

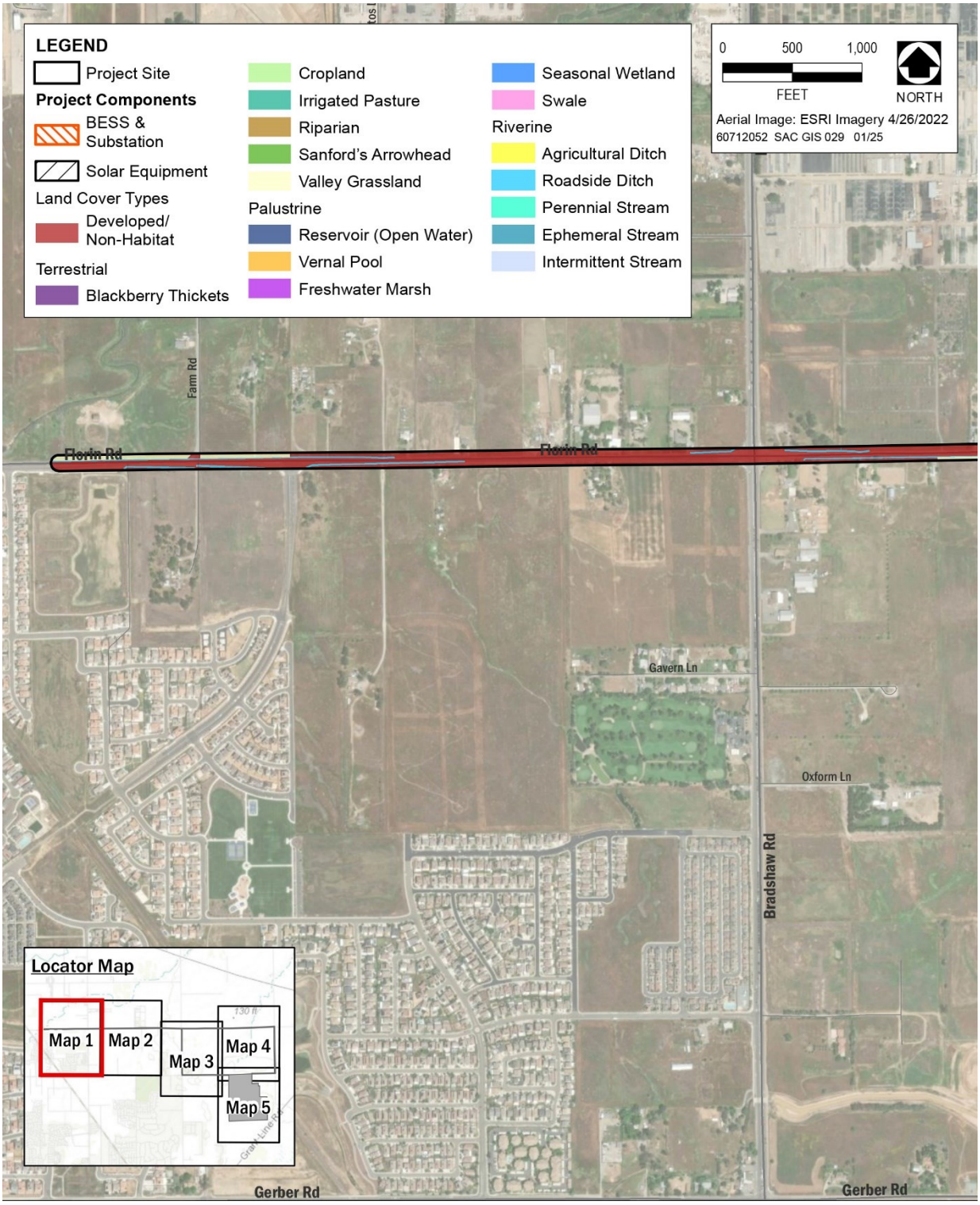
Land Cover Type	Powerline Acreage	Northern Area Acreage	Southern Area Acreage	Study Area Acreage
Roads, Disturbed, Developments	69.31	0.00	1.34	70.66
Blackberry thickets	0.06	0.00	0.00	0.06
Cropland	0.79	79.71	305.37	385.87
Irrigated Pasture	0.00	0.00	102.93	102.93
Riparian	0.90	0.00	0.00	0.90
Valley Grassland	32.82	0.00	31.03	63.85
Total	**103.88**	**79.71**	**440.68**	**624.27**

Source: Data compiled by AECOM in 2024.

Table 3.4-2. Aquatic Feature Types on the Project Site

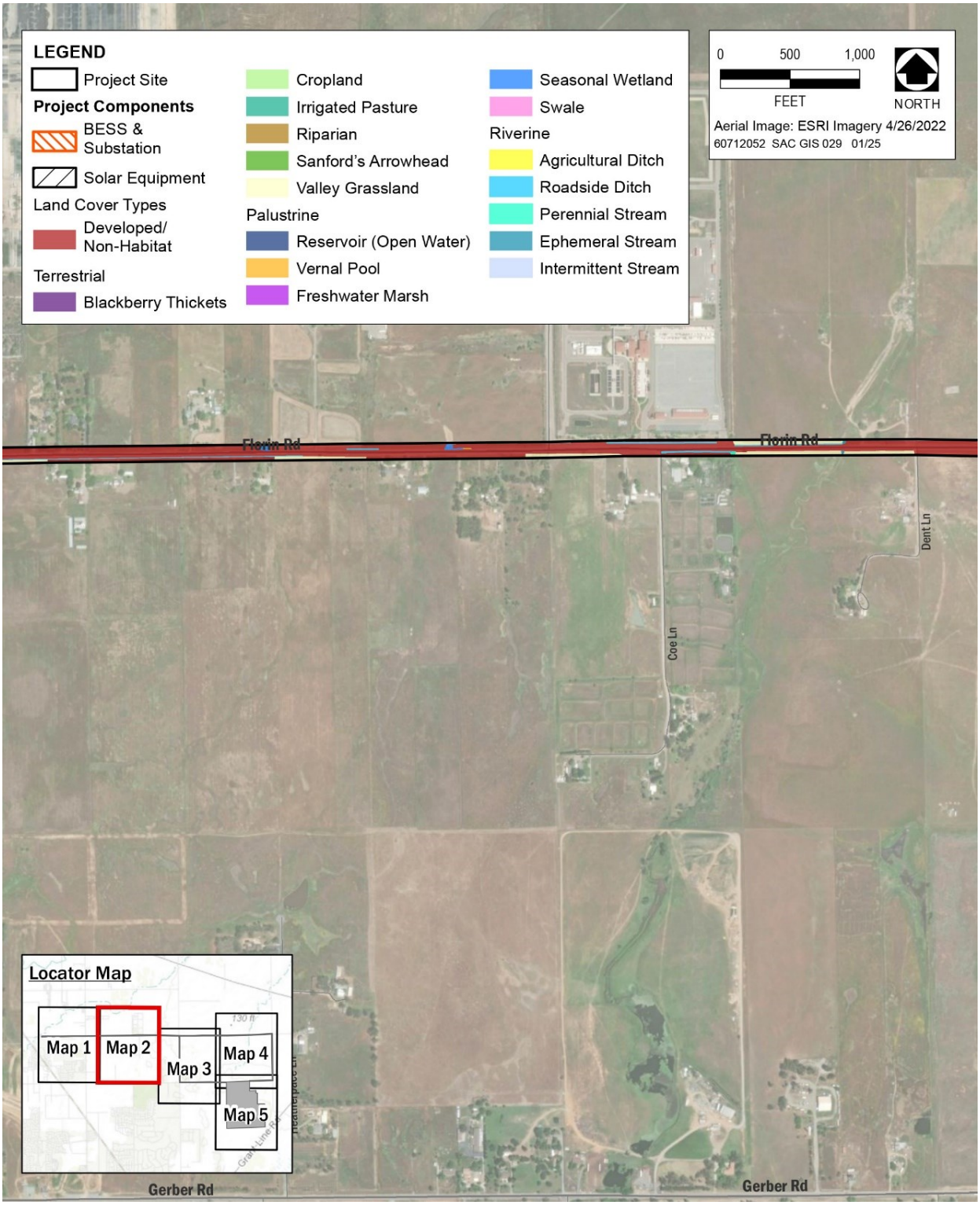
Aquatic Feature Type	Powerline Acreage	Northern Area Acreage	Southern Area Acreage	Study Area Acreage
Agricultural Ditch	1.45	0.25	4.78	6.48
Roadside Ditch	0.96	0.00	0.01	0.96
Perennial Stream	0.18	0.00	0.00	0.18
Ephemeral Stream	0.11	0.00	0.00	0.11
Intermittent Stream	0.10	0.00	0.00	0.10
Reservoir (Open water)	0.00	0.00	2.85	2.85
Vernal Pool	0.75	0.00	0.53	1.28
Freshwater Marsh	0.35	0.00	1.06	1.41
Seasonal Wetland	0.67	0.05	4.75	5.47
Swale	0.08	0.00	0.00	0.08
Total	**4.70**	**0.05**	**13.98**	**18.73**

Source: Data compiled by AECOM in 2024.



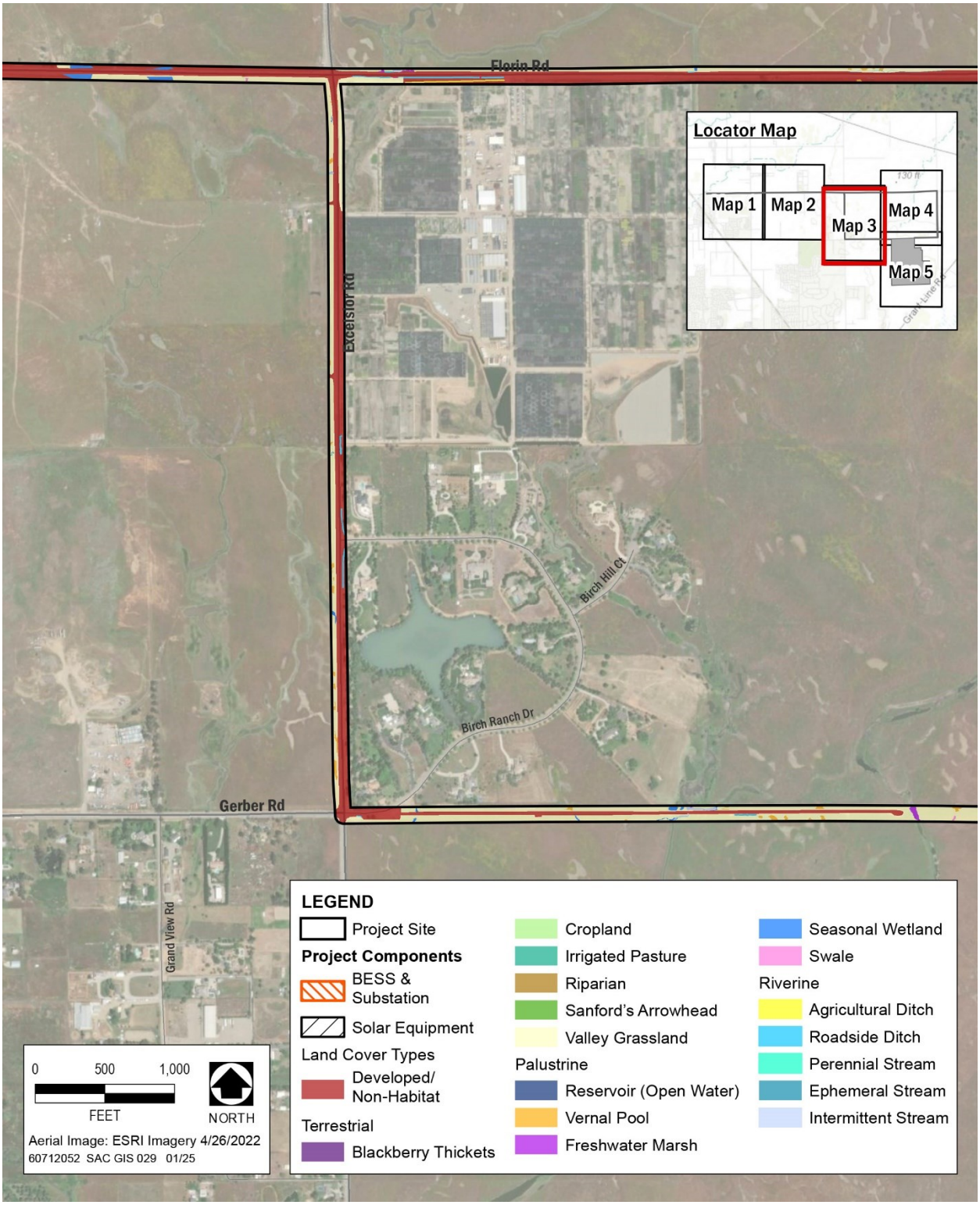
Source: Data compiled by AECOM in 2024.

Exhibit 3.4-1. Project Site Land Cover – Map 1



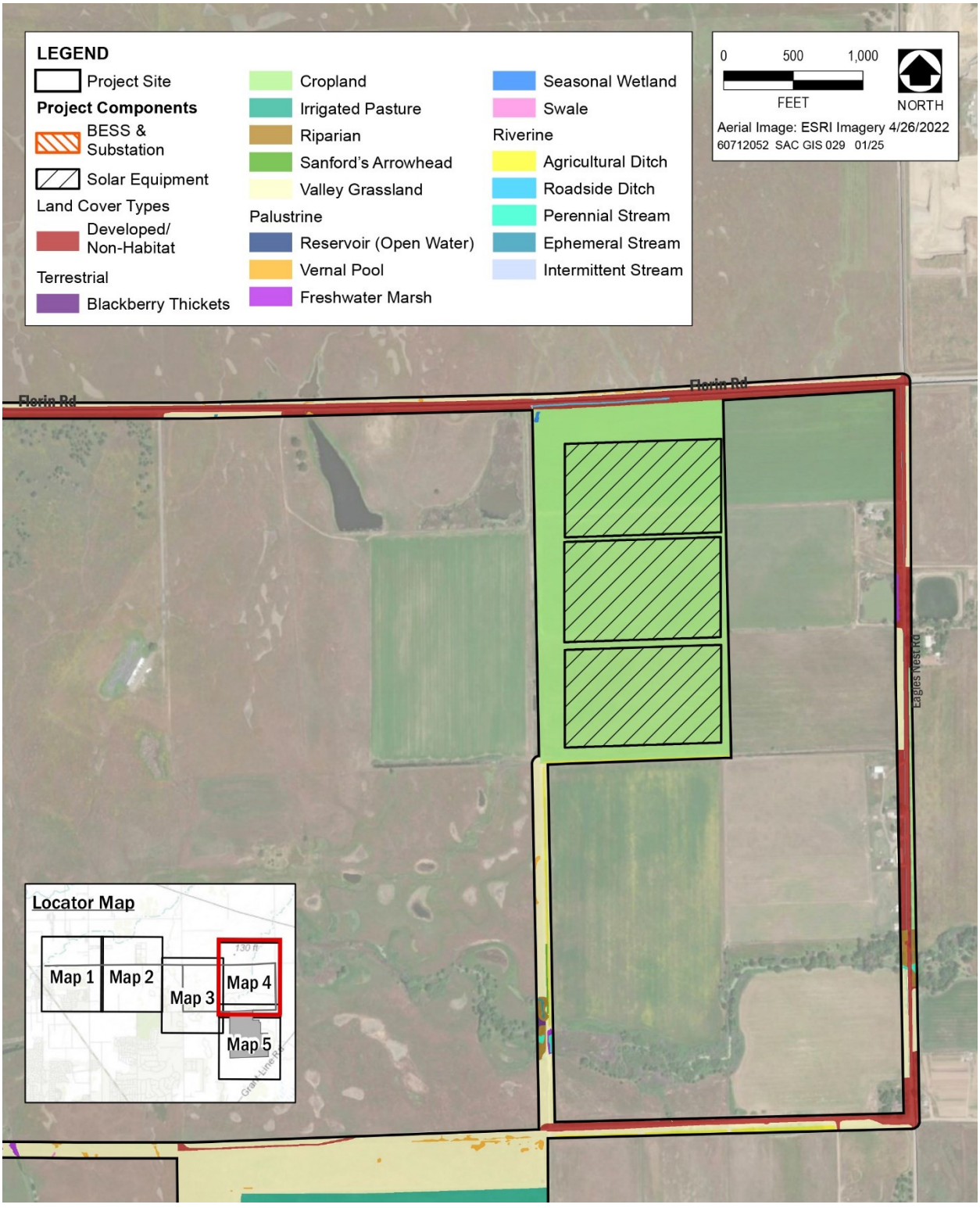
Source: Data compiled by AECOM in 2024.

Exhibit 3.4-2. Project Site Land Cover – Map 2



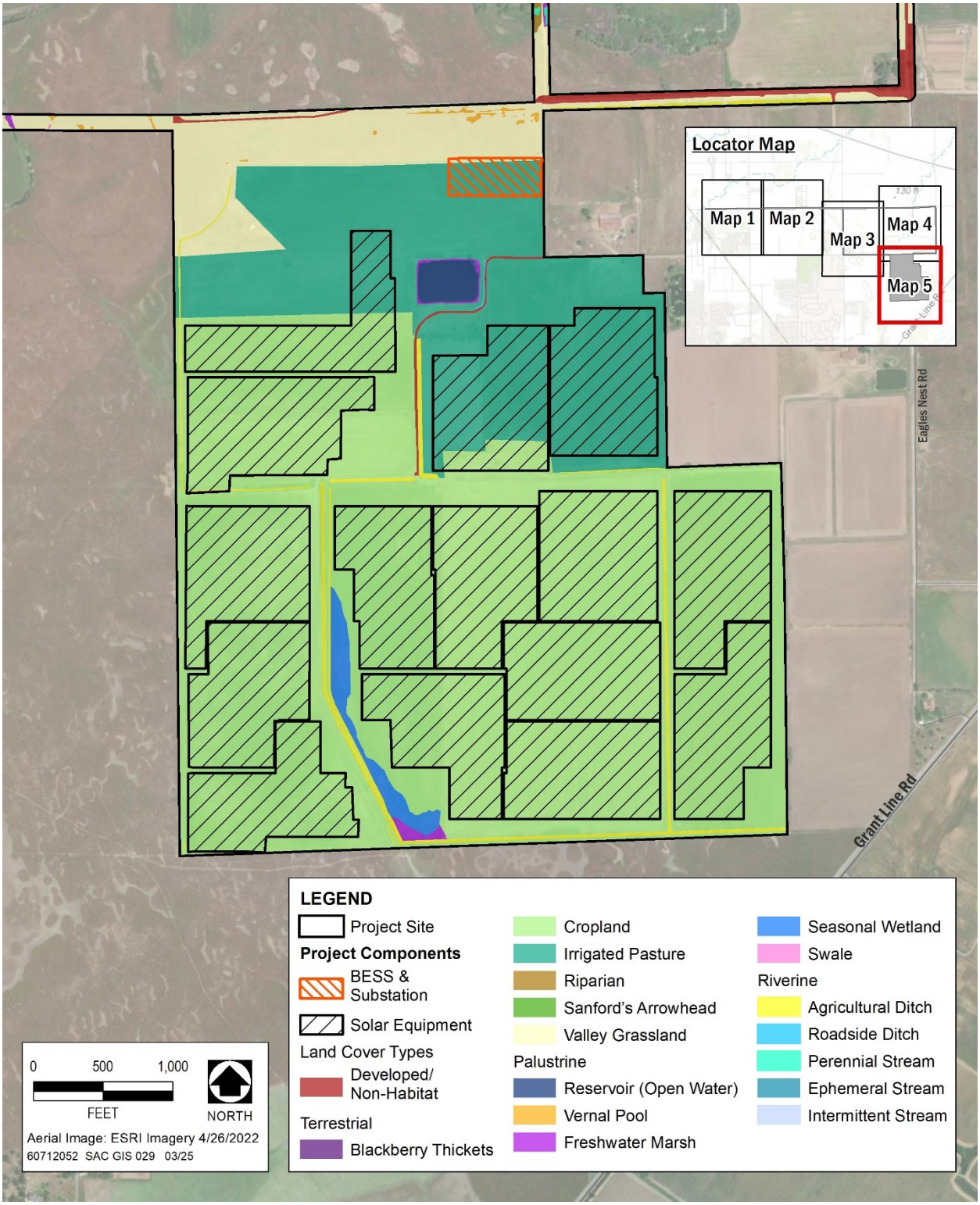
Source: Data compiled by AECOM in 2024.

Exhibit 3.4-3. Project Site Land Cover – Map 3



Source: Data compiled by AECOM in 2024.

Exhibit 3.4-4. Project Site Land Cover – Map 4



Source: Data compiled by AECOM in 2024.

Exhibit 3.4-5. Project Site Land Cover – Map 5

Terrestrial Land Cover

The following describes terrestrial land cover types within the project site and biological resources study area. The biological resources study area includes the northern and southern areas, the distribution lines, and a 25-foot buffer on either side of the distribution lines, as described in the Biological Resources Survey Report (Appendix BR-2).

Cropland

Croplands in the biological resources study area at the time of the field survey had been plowed recently at the time of the biological resources reconnaissance survey (fall of 2023) and fields were mostly fallow. (See Appendix BR-2 *Biological Resources Survey Report*, Photographs 7, 37-38). Identifiable sprouting vegetation in these areas included Italian rye grass, medusahead, filaree, and in some areas, tall nut sedge (*Cyperus eragrostis*). Cropland on the project site is typically used for irrigated crops and forage ground for livestock. Crops have included sudan grass for seed, corn for grain, summer and winter hay, and triticale grain.

Irrigated Pasture

Some of the irrigated pastures on the southern area of the project site were being grazed by sheep at the time of the field survey. All fields with signs of grazing are included in the irrigated pasture-grassland land cover. Some of the fields within this land cover supported wetland species such as nut sedge, spinyfruit buttercup (*Ranunculus muricatus*), wall barley (*Hordeum marinum*), and lamp rush (*Juncus effusus*) (Appendix BR-2 *Biological Resources Survey Report,* Photographs 8, 17, 29). Although wetland vegetation was present, wetland hydrology was absent. A verbal discussion with the landowners revealed yearly irrigation flooding in these fields to promote regrowth of the pasture grasses for livestock (B. Waegell, personal communication, SMUD, AECOM. January 23, 2024).

Developed

Developed land cover includes the asphalt and dirt roads as well as the disturbed road shoulders which generally surround the cropland, irrigated pastures, and valley grasslands of the biological resources study area. Low density development, consisting of small residential and a commercial nursery structure as well as their associated landscaping, are also included in this land cover. During the field survey, no vegetation was detected within the roadways, non-native grasses were identified as the dominant vegetation in the disturbed areas, landscaped ornamental species were identified as the dominant vegetation type in the low-density residential development. For more detail on plant species identified within this land cover type, see Appendix BR-2 *Biological Resources Survey Report.*

Valley Grassland

Valley grassland is an annual herbaceous plant community surrounding the biological resources study area on less disturbed land, adjacent to roads, and developments. Valley grassland is also intertwined with vernal pool complexes in the northwest portion of the southern area of the project site and occurs as an understory within Valley oak riparian

woodland. Valley grassland is dominated by naturalized annual grasses such as bromes, Italian ryegrass, wild barley (*Hordeum* spp.), and wild oats (*Avena* spp.). Also included are native and non-native forbs and native grasses. Common forbs include filaree, turkey mullein (*Croton setiger*), true clovers (*Trifolium* spp.), lupines (*Lupinus* spp.), fiddleneck (*Amsinckia* spp.), and willowherb (*Epilobium* spp.).

The blackberry thickets, cropland, irrigated pasture, and valley grassland habitats in the biological resources study area can provide foraging, nesting, breeding, and refuge to both common and special-status wildlife species. This habitat offers potential foraging and breeding habitat for special-status species such as Monarch butterfly (*Danaus plexippus*) and western spadefoot (*Spea hammondii*). Small rodents are commonly found within these habitats and are important prey for raptors, such as Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), and northern harrier (*Circus hudsonius*), which also nest in these habitats. Western burrowing owl (*Athene cunicularia*) consume a mix of small rodents, arthropods, and other small animals and may use these habitat types for breeding and foraging. Loggerhead shrike (*Lanius ludovicianus*) primarily prey on ground-dwelling insects but also take small rodents. Greater sandhill crane (*Antigone canadensis tabida*) is a winter visitor to the study area and forages for seeds and small animals. Tricolored blackbird (*Agelaius tricolor*) forage on grassland dwelling invertebrates and frequently nest in blackberry thickets.

Riparian

Riparian habitats are those surrounding water bodies, such as rivers and creeks, and are unique vegetation communities influenced by the presence of water. The areas surrounding the water body are a transitional zone between plants that are adapted to the wet environment and the neighboring upland habitat. The mixed riparian forest in the biological resources study area surrounds Laguna Creek on both sides of Eagle Nest Road in the southern area of the project site and surrounding Laguna Creek in the northern area of the project site. The dominant species in this area is Valley oak (*Quercus lobata*) providing the canopy with orchard grass (*Dactylis glomerata*) and lamp rush growing along the banks. Riparian scrub in the biological resources study area surrounds Frye Creek. The dominant species in this area is Himalayan blackberry and lamp rush growing along the banks.

Riparian habitats in the biological resources study area provide foraging, shelter, and breeding habitat for several special-status species and other native plant and animal species, including both resident and migratory species. Western pond turtle (*Emys marmorata*) and giant gartersnake (*Thamnophis gigas*) utilize this habitat. Swainson's hawk, white-tailed kite, Cooper's hawk, loggerhead shrike, tricolored blackbird, and song sparrow "Modesto" population (*Melospiza melodia* pop. 1) may use this landcover for nesting, foraging, and cover. Western red bat (*Lasiurus frantzii*) may use this habitat for roosting and wintering. Additionally, there is potential for special-status plant species such as Sanford's arrowhead (*Sagittaria sanfordii*) in Frye and Laguna Creek. Sandford's arrowhead was identified in Frye Creek during the June 10, 2024 survey.

Blackberry Thickets

Blackberry thickets are dominated by Himalayan blackberry (*Rubus armeniacus*). In the biological resources study area, the blackberry thickets were identified growing on the banks of agricultural canals. These thickets were extremely dense and some almost filled the width of the canal beds.

Aquatic Land Cover / Waters of the United States and Waters of the State

Reservoir (Open Water)

The reservoir in the southern area of the project site is surrounded by a steep berm, characterized by dense emergent vegetation on the banks, and fed by a perennial source of fresh water. The berm surrounding the reservoir was found to have deep, well established, ground squirrel burrows, providing suitable habitat for western burrowing owl. The reservoir also provides suitable nesting places for many waterfowl and migratory nesting birds. The reservoir in the project site is human-made and water comes from an artificial water source; therefore, it is not anticipated to be a potentially jurisdictional WUS or WOS.

Seasonal Wetlands and Swales

Seasonal wetlands and swales are low-lying regions that flood during the rainy season and gradually dry up from spring to summer. Along collection line alignments, these features are commonly situated in depressional areas within grasslands and adjacent to stream banks. The dominant species found within the seasonal wetlands of the study area was lamp rush. Other species commonly found include prickly buttercup, tall nut sedge, curly dock (*Rumex crispus*), wall barley, and Italian rye grass. Seasonal wetlands on the project site that are adjacent to or within intermittent streams which support relatively permanent water are potentially jurisdictional WUS and WOS. Seasonal wetlands on the project site that are isolated, within or adjacent to ephemeral streams are not anticipated to be potentially jurisdictional WUS but are potentially jurisdictional WOS. Swales do not support relatively permanent water, are isolated, and therefore are not anticipated to be a potentially jurisdictional WUS. However, swales are anticipated to be potentially jurisdictional WOS.

The seasonal wetland vegetation provides habitat for a variety of common, migratory, and special-status nesting birds such as the tricolored blackbird and song sparrow – “Modesto” population. Other special-status wildlife species with the potential to occur in seasonal wetland and swale habitats include the following: vernal pool fairy shrimp (*Branchinecta lynchi*), Midvalley fairy shrimp (*Branchinecta mesovallensis*), vernal pool tadpole shrimp (*Lepidurus packardi*), and Ricksecker’s water scavenger beetles (*Hydrochara ricksecker*i), and western spadefoot (*Spea hammondii*). Less dense edges of seasonal wetlands have the potential to support special-status plant species such as the dwarf downingia (*Downingia pusilla*), Boggs Lake hedge hyssop (*Gratiola heterosepala*), and legenere (*Legenere limosa*).

Freshwater Marsh

Freshwater marshes are commonly found along streams in poorly drained depressions and in the shallow waters bordering lakes, ponds, and rivers. These wetlands typically exhibit varying water levels, ranging from a few inches to two or three feet, with some marshes occasionally drying out completely. Marsh vegetation is predominantly characterized by enduring perennial species such as narrow-leaf cattail (*Typha angustifolia*) and common tule (*Schoenoplectus acutus* var. *occidentalis*). In the northern and southern areas of the project site, all agricultural ditches host dense and predominant emergent marsh vegetation, resembling freshwater marshes due to irrigation practices. The portion of Frye Creek that runs through the northern area appears to also collect flows from irrigation practices and resembles freshwater marshes. Moreover, areas within irrigated pasture in the southern area of the project site also support emergent marsh vegetation Along the alignment, two roadside ditches along Florin Road, just east of Excelsior Road, host dense and predominant emergent vegetation resembling freshwater marshes.

Freshwater marshes that have a continuous connection with surface water (e.g., within or adjacent to a perennial or intermittent stream) are potentially jurisdictional WUS. Freshwater marshes within the project site that are isolated, associated with artificial ponds used for ongoing agricultural activities, or in a roadside ditch that is not directly hydrologically connected to a potentially jurisdictional feature are not anticipated to be a potentially jurisdictional WUS. Furthermore, there are freshwater marshes within the project site that are adjacent to irrigated cropland used for an ongoing agricultural operation, surface water and shallow water table in areas that did not support surface water was observed during the January field survey suggesting that this area may be a natural wetland, a wetland created by modification of a surface water of the state, or a combination of both. Therefore, this freshwater marsh is anticipated to be a potentially jurisdictional WOS.

The freshwater marshes in the biological resources study area offer habitat for various wildlife, including small mammals, nesting birds, and special-status species like tricolored blackbird and song sparrow (“Modesto” population).

Vernal Pools

Vernal pools are seasonal depressional wetlands characterized by shallow depths and an extended hydroperiod, attributed to a subsurface restrictive soil layer that impedes water infiltration. These unique features foster specialized flora and fauna adapted to their distinctive environment. Identification of vernal pools often relies on the presence of specific plant and animal species indicative of these habitats. Typically dispersed in small units amidst grasslands, vernal pools create a diverse ecosystem capable of supporting a variety of both common and special-status species. In the biological resources study area, vernal pool habitat is scattered throughout, notably along the northern section of the southern area of the project site, within the valley grasslands north of Florin Road, and within the preserve areas immediately west and south of the southern area of the project site. All vernal pools in the biological resources study area are isolated and support

seasonal water that accumulates from winter rainfall and dries down by late spring or summer. Therefore, vernal pools are not anticipated to be a potentially jurisdictional WUS. However, they are potentially jurisdictional WOS.

The vernal pools within the survey area have the potential to provide high quality substrate, breeding, foraging, and sheltering habitat to an abundant number of special-status species. Special-status vernal pool plant species with the potential to occur in vernal pool habitats include the following: dwarf downingia, Boggs Lake hedge hyssop, Ahart's dwarf rush (*Juncus leiospermus var. ahartii*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), Slender Orcutt grass (*Orcuttia tenuis*), and Sacramento Orcutt grass (*Orcuttia viscida*). Special-status wildlife species with the potential to occur in vernal pool habitats include the following: vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, and Ricksecker's water scavenger beetles, and western spadefoot.

Agricultural Ditch

The agricultural ditches on both the northern and southern areas of the project site are routinely used for irrigation and, as a result, contain water throughout the year. Portions of the agricultural ditches have deep, slow-moving water, while other sections house dense emergent marsh vegetation. Agricultural ditches are not typically considered potentially jurisdictional WUS or WOS.

The agricultural ditches in the biological resources study area offer habitat for various wildlife, including small mammals, nesting birds, and special-status species like the giant garter snake, Sanford's arrowhead, tricolored blackbird and song sparrow ("Modesto" population).

Roadside Drainage Ditch

Roadside drainage ditches are constructed in uplands to drain and convey water from developed areas and along roads. Similar to the developed habitats where they are typically found, the vegetation in and surrounding the ditches consists mostly of naturalized grasses and non-native forbs. Roadside ditches are not typically considered potentially jurisdictional WUS or WOS. However, one roadside ditch along Florin Road near the intersection of Excelsior Road is hydrologically connected to a freshwater marsh and an intermittent stream and therefore is a potentially jurisdictional WUS.

Roadside ditches offer temporary and opportunistic foraging or cover to common species.

Ephemeral, Intermittent, and Perennial Streams

There are several ephemeral and intermittent streams scattered throughout the biological resources study area. Perennial streams within the biological resources study area are Frye and Laguna Creek (*Appendix BR-2 Biological Resources Survey Report*, Photographs 27-28 and 32-36).

Laguna Creek intersects the biological resources study area at three locations; however, the westernmost portion is vegetated within the OHWM and is thus categorized as freshwater marsh. Laguna Creek flows southwest for approximately 0.6 miles and then

reenters the biological resources study area at the overhead collector line that connects the northern and southern areas of the project site. Laguna Creek exits the biological resources study area and continues to flow in a westerly direction for approximately 1.1 miles, confluences with numerous other streams including Frye Creek, and reenters the biological resources study area west of the southern area of the project site along the southern portion of the powerlines. An unnamed perennial stream flows through the western portion of the powerlines on the south side of Florin Road. It flows south and exits the biological resources study area via a straight channel through undeveloped valley grassland habitat. It confluences with an ephemeral stream and continues to flow south and supports instream ponded areas. Both perennial streams support permanent water and are anticipated to be potentially jurisdictional WUS.

Four intermittent streams (streams that convey water intermittently throughout the wet season) occur in the project site, including Gerber Creek, Frye Creek, and two unnamed streams. Gerber Creek is in the northwestern portion of the powerline alignment, on both the north side of Florin Road just west of the intersection with Excelsior Road, and also in the project site along the west side of Excelsior Road. Frye Creek is in the northeastern portion of the powerline alignment, one unnamed stream is in the southwestern portion of the powerline alignment, and the other unnamed stream occurs just east of the first and is located on the north side of Gerber Road in the powerline alignment portion of the project site. All intermittent streams within the project site are potentially jurisdictional WUS.

Six ephemeral streams (streams that convey water only following rain events) are present in the project site, all of which are unnamed streams. The first is in the northwestern portion of the powerline alignment on the north side of Florin Road, the second is in the northwestern portion of the powerline alignment on the north and south side of Florin Road, the third is in the northern portion of the powerline alignment on the north side of Florin Road, the fourth is in the northern portion of the powerline alignment on the south side of Florin Road, and fifth is in the western portion of the powerline alignment on the west side of Excelsior Road, and the sixth is in the powerline alignment portion of the project site that connections the northern and southern areas of the project site. These ephemeral streams are not anticipated to be potentially jurisdictional WUS, but they are potentially jurisdictional WOS.

Laguna Creek has the potential to support special-status aquatic species such as western pond turtle, giant gartersnake, tricolored blackbird, song sparrow (“Modesto” population), and Sanford’s arrowhead.

Table 3.4-3. Aquatic Resources in the Project Site

Aquatic Resource Type	Total Acres	Acres of Potential WUS	Acres of Potential WOS	Total Linear Feet	Linear Feet of Potential WUS	Linear Feet of Potential WOS
Other Waters						
Agricultural Ditch*	6.480	0	0	23,123	0	0
Ephemeral Stream	0.106	0	0.106	380	0	380
Intermittent Stream	0.095	0.095	0.095	452	452	452
Other Waters/ Reservoir	2.851	0	0			
Perennial Stream	0.182	0.182	0.182	176	176	176
Roadside Ditch	0.964	0.003	0.003	21,680	53	53
Other Waters Total	**10.678**	**0.280**	**0.386**	**45,811**	**681**	**1,061**
Wetlands						
Freshwater Marsh	1.412	0.188	0.856			
Swale	0.078	0	0.078			
Seasonal Wetland	5.471	0.101	5.421			
Vernal Pool	1.279	0	1.29			
Wetlands Total	**8.240**	**0.289**	**7.645**			

Source: Aquatic Resources Delineation Report (Appendix BR-1)
*neither WUS nor WOS.

Sensitive Biological Resources

Sensitive biological resources include those species, natural communities, and habitats that receive special protection through ESA, CESA, CWA, California Fish and Game Code, Porter-Cologne Act, or local plans, policies, and regulations; or that are otherwise considered sensitive by federal, state, or local resource conservation agencies. Sensitive biological resources evaluated as part of this analysis include sensitive natural communities and special-status species. These resources are discussed below.

Special-Status Species

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

- species officially listed by the State of California or the Federal government as endangered, threatened, or rare;
- candidates for state or Federal listing as endangered or threatened;
- taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- species identified by CDFW as species of special concern;

- species listed as Fully Protected under the California Fish and Game Code;
- species afforded protection under local or regional planning documents;
- plant taxa considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR) of:
    - 1A, presumed extinct in California and not known to occur elsewhere;
    - 1B, considered rare or endangered in California and elsewhere;
        - 2A, presumed extinct in California, but more common elsewhere; and
        - 2B, considered rare or endangered in California but more common elsewhere.
- In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to State CEQA Guidelines Section 15380. However, these species may be considered locally significant and may be evaluated by the lead agency on a case-by-case basis; and
- species that are considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or unique in a local context such as within a county or region (State CEQA Guidelines Section 15125 [c]) or is so designated in local or regional plans, policies, or ordinances (State CEQA Guidelines, Appendix G).

Special-Status Plants

A list of special-status plant species with potential to occur on the project site was developed based on results of database searches of the CNDDB and CNPS Inventory of Rare and Endangered Plants (CDFW 2024a; CNPS 2024a). Special-status plant occurrences documented in the CNDDB within 2 miles of the project site are shown in Exhibit 3.4-6. As summarized below in Table 3.4-4, a total of 8 special-status plant species were identified as having moderate to high potential of occurring or are known to occur in the project site or vicinity (*Appendix BR-2 Biological Resources Survey Report*). No suitable habitat (alkaline soils, alkaline flats, marshes, swamps, Delta riverbanks, peat islands, riprap, and levees) is present in the project site for the following special-status plant species and they were eliminated from further evaluation for this project as having no potential to occur or low potential to occur:

- Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*), CRPR 2B.2
- woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*), CRPR 1B.2
- alkali-sink goldfields (*Lasthenia chrysantha*), CRPR 1B.1
- Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), CRPR 1B.2

- saline clover (*Trifolium hydrophilum*), CRPR 1B.2

Potential habitat is present in vernal pools, seasonal wetlands, open water, and agricultural ditches with standing water on the project site for the following special-status plant species:

- Dwarf downingia (*Downingia pusilla*), CRPR 2B.2
- Boggs Lake hedge-hyssop (*Gratiola heterosepala*), state-listed as endangered and CRPR 1B.2
- Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), CRPR 1B.2
- Legenere (*Legenere limosa*), CRPR 1B.1
- Pincushion navarettia (*Navarretia myersii* ssp. *Myersii),* CRPR 1B.1
- Slender Orcutt grass (*Orcuttia tenuis*), federally listed as threatened, state-listed as endangered, and CRPR 1B.1
- Sacramento Orcutt grass (*Orcuttia viscida*), federally listed and state-listed as endangered and CRPR 1B.1
- Sanford's arrowhead (*Sagittaria sanfordii*), CRPR 1B.2

No comprehensive special-status plant surveys have been conducted in the project site or biological resources study area; however, limited focused special-status plant surveys for Sanford's arrowhead with potential to occur in drainages in the project area are planned for summer 2025 for those areas where direct impacts may occur. Sanford's arrowhead was incidentally observed by AECOM biologists in an agriculture ditch on the northern area on June 10, 2024. Surveys were not conducted during the blooming period for this species on the southern area. However; there is suitable habitat for this species in the reservoir on the southern area, large agricultural ditches with standing water, and in Laguna Creek. One area of potentially suitable habitat for Sanford's arrowhead in the southeast corner of the southern areas is slated for potential culvert improvements.

Table 3.4-4. Special-Status Plant Species Known or with Potential to Occur in the Project Region and their Potential for Occurrence on the Project Site

Scientific Name **Common Name**	**Regulatory Status[1] Federal/State/ CRPR/ SSHCP Covered Species**	**Habitat Requirements**	**Potential for Occurrence**
Downingia pusilla dwarf downingia	CRPR 2B.2, SSHCP covered species	Central Valley; Vernal pools and mesic valley and foothill grasslands; Found at elevations between 0–2,820 feet. Blooms March to May.	**Potential to Occur;** habitat does occur in the study area. A complex of occurrences have been reported on CNDDB less than 6 miles southwest.
Boggs Lake hedge hyssop *Gratiola heterosepala*	State endangered, CRPR1B.2, SSHCP covered species	Clay soils; usually in vernal pools, sometimes on the margins of lakes, stock ponds, borrow pits, marshes or swamps; Found at elevations between 30 to 7,790 feet. Blooms April to August.	**Potential to Occur;** habitat does occur in the study area. A CNDDB occurrence (#30) was reported in a vernal pool approximately 2 miles east of the study area.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	CRPR 1B.2, SSHCP covered species	Wet areas in valley and foothill grassland, vernal pool margins; Found at elevations between 95–750 feet. Blooms March to May	**Potential to Occur;** habitat does occur in the study area. Two CNDDB occurrences (#7 and 8) was reported within 2.5 miles north of the study area.
legenere *Legenere limosa*	CRPR 1B.1, SSHCP covered species	Deep, seasonally wet habitats such as vernal pools, ditches, marsh edges, and river banks; Found at elevations between 0 to 2,885 feet. Blooms April to June.	**Known to Occur;** habitat does occur in the study area. A CNDDB occurrence (#28) was reported within 350 feet of the collection lines surrounding Laguna Creek. Several other occurrences have been reported north of the study area and within 2 miles of the study area.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	CRPR 1B.1, SSHCP covered species	Vernal pools; Acidic (often) Found at elevations between 65–1,085 feet. Blooms April to May.	**Potential to Occur;** Vernal pool habitat does occur in the study area. There are no CNDDB occurrences within 10 miles of the study area. The SSHCP includes the study area in modeled habitat for this species.

Scientific Name **Common Name**	**Regulatory Status[1] Federal/State/ CRPR/ SSHCP Covered Species**	**Habitat Requirements**	**Potential for Occurrence**
Slender Orcutt grass *Orcuttia tenuis*	Federally threatened, state endangered, CRPR 1B.1, SSHCP covered species	Vernal pools; Gravelly (often); Found at elevations between 115–5,775 feet. Blooms May to September.	**Potential to Occur;** habitat does occur in the study area. Two CNDDB occurrences (#16 and 90) was reported within 1 mile south of the study area.
Sacramento Orcutt grass *Orcuttia viscida*	Federally endangered, state endangered, CRPR 1B.1, SSHCP covered species	Vernal pools; Found at elevations between 100–330 feet. Blooms April to July.	**Known to Occur;** habitat does occur in the study area. CNDDB occurrence (#20) was reported within the study area.
Sanford's arrowhead *Sagittaria sanfordii*	CRPR 1B.2, SSHCP covered species	In standing or slow-moving freshwater ponds, marshes, and ditches; Found at elevations between 0 to 2,135 feet. Blooms May to October.	**Known to Occur;** habitat does occur in the study area surrounding Frye Creek and Laguna Creek. This species was observed in Frye Creek during the June 10, 2024 survey (Figure 3.4). Several CNDDB occurrences have been reported within 5 miles of the study area.

Source: Data compiled by AECOM 2024.

Notes:

CEQA = California Environmental Quality Act

CESA = California Endangered Species Act

CNDDB = California Natural Diversity Database

ESA = Endangered Species Act

SSHCP = South Sacramento Habitat Conservation Plan

[1] California Rare Plant Rank (CRPR) Categories:

1B = Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

2B = Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)

.2 Fairly endangered in California (20 to 80% of occurrences are threatened)

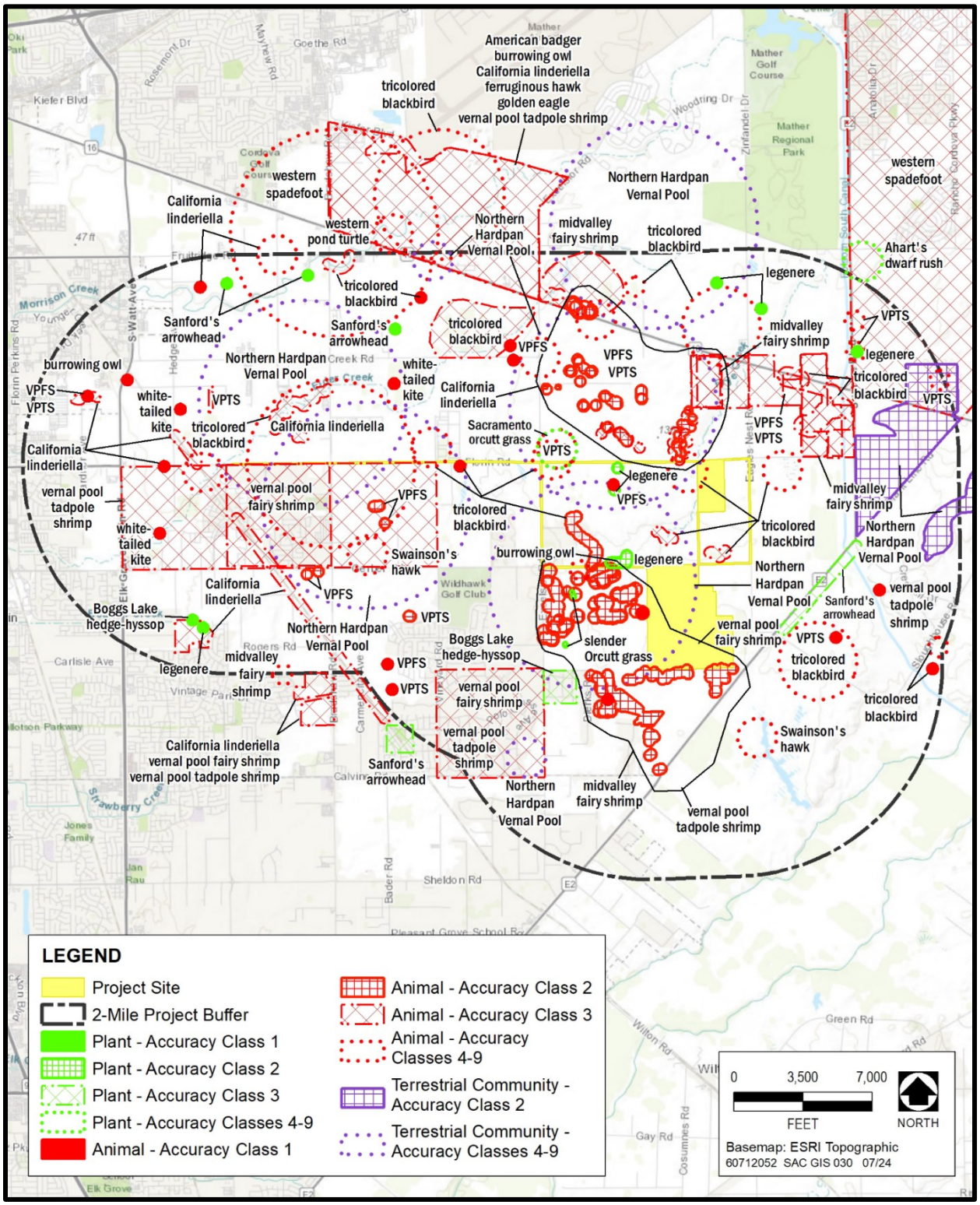


Exhibit 3.4-6. Special-Status Species Documented in the CNDDB within 2 Miles of the Project Site

Special-Status Wildlife

AECOM wildlife biologists conducted habitat-based field surveys for wildlife on the project site from January 10 through January 12, 2024, February 16, 2024, May 7, 2024, and June 10, 2024. During the field surveys, the biologists evaluated existing conditions, including vegetation composition, aquatic resources, and land use to determine the potential for special-status wildlife species to occupy the project site.

The literature and database reviews identified 34 special-status wildlife species that could occur in or near the project site, provided suitable habitat conditions were present. Special-status wildlife occurrences documented in the CNDDB within 2 miles of the project site are shown in Exhibit 3.4-6, above. Sixteen of these species were eliminated from further evaluation in the EIR because they have no potential to occur or low potential to occur, either because the field surveys determined there is no suitable habitat at the project site, or because the species has a limited range that does not include the project site. Some bird species were eliminated from further evaluation because they do not nest in the region and they are of conservation concern only within their nesting range. Although these species have been reported in the nine-quad search area, they are not expected to occur at the project site. Species that were considered, but eliminated from further evaluation are:

- Crotch's bumblebee (*Bombus crotchii*)
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
- Green sturgeon – southern DPS (*Acipenser medirostris* pop. 1)
- Steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus* pop. 11)
- Sacramento splittail (*Pogonichthys macrolepidotus*)
- Longfin Smelt (*Spirinchus thaleichthys*)
- California tiger salamander - central California DPS (*Ambystoma californiense* pop. 1)
- Golden eagle (*Aquila chysaetos*)
- Ferruginous hawk (*Buteo regalis*)
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- California black rail (*Laterallus jamaicensis coturniculus*)
- Purple martin (*Progne subis*)
- Bank swallow (*Riparia riparia*)
- Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)
- American badger (*Taxidea taxus*)
- Pallid bat (*Antozous pallidus*)

Table 3.4-5, below, and Appendix BR-2, *Biological Resources Survey Report* include Special-Status Species Occurrences Tables, summarizing the regulatory status, habitat, and potential for occurrence within the project site for each of the remaining 18 special-status wildlife species.

Table 3.4-5. Special-Status Animal Species Known or with Potential to Occur in the Project Region and their Potential for Occurrence on the Project Site

Scientific Name Common Name	Regulatory Status[1] Federal/State/SSHCP Covered Species	Habitat	Potential for Occurrence
Crustaceans			
Vernal pool fairy shrimp *Branchinecta lynchi*	Federally listed as threatened, SSHCP covered species	Vernal pools in valley and foothill grassland; small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**Potential to Occur**; The vernal pools in the study area have the potential to provide habitat for this species. The nearest CNDDB record (#186) is less than 0.2 miles south of the northern collection lines. The nearest CNDDB record (#532) is less than 0.5 miles west of the southern area.
Midvalley fairy shrimp *Branchinecta mesovallensis*	SSHCP covered species	Has been found in small, short-lived vernal pools and grass-bottomed swales.	**Potential to Occur**; The vernal pools in the study area have the potential to provide habitat for this species. The nearest CNDDB record (#113) is less than 300-feet west of the southern area.
Vernal pool tadpole shrimp *Lepidurus packardi*	Federally listed as endangered, SSHCP covered species	Vernal pools in valley and foothill grassland; pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**Potential to Occur**; The vernal pools in the study area have the potential to provide habitat for this species. The nearest CNDDB record (#334) is less than 500-feet south of the southern area.
Insects			
Monarch butterfly *Danaus plexippus*	Candidate for Federally listing as threatened	This species can breed or forage in a field, roadside area, open area, wet area, or urban garden, as long as there is milkweed and flowering plants around. This species requires milkweed for breeding.	**Potential to Occur**; Potential foraging habitat occurs in undisturbed grasslands of the study area. Breeding habitat (milkweed) was not identified during the field surveys, however; surveys were not within the blooming period and vegetation is regularly grazed. The Monarch Milkweed Mapper shows 3 recent milkweed occurrences within 3 miles of the study area. Breeding monarchs were recorded in 2023 approximately 9 miles west of the study area (Sighting- 22196 and 22195) (Xerces 2024).

Scientific Name Common Name	Regulatory Status[1] Federal/State/SSHCP Covered Species	Habitat	Potential for Occurrence
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	SSHCP Covered Species	Occurs in playa-like vernal pools and ponds.	**Potential to Occur**; The vernal pools in the study area have the potential to provide habitat for this species. The nearest CNDDB record (#5) is 3.3 miles north of the northern collection lines.
Amphibians and Reptiles			
Western spadefoot *Spea hammondii*	Federal candidate for listing, CDFW species of special concern, SSHCP covered species	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	**Potential to Occur**; The vernal pools in the study area and surrounding grasslands have the potential to provide habitat for this species. The nearest CNDDB record (#169) is less than 3 miles east of collection lines.
Giant garter snake *Thamnophis gigas*	Federally listed as threatened, state threatened, SSHCP covered species	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence or low numbers of large predatory fish. Requires permanent water during the active season. Also require upland refugia not subject to flooding during the snake's inactive season.	**Potential to Occur**; agricultural ditches present within the study area have the potential to provide habitat for this species. The nearest CNDDB occurrence (#84) is approximately 7 miles southwest of study area.

Scientific Name Common Name	Regulatory Status[1] Federal/State/SSHCP Covered Species	Habitat	Potential for Occurrence
Western pond turtle *Emys marmorata*	Federal candidate for listing, CDFW species of special concern, SSHCP covered species	Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands with low, sparse vegetation.	**Potential to Occur**; Laguna Creek, freshwater ponds, and surrounding grasslands in the study area have the potential to provide habitat for this species. The nearest CNDDB record (#672) is approximately 5 miles north of northern collection line.
Birds			
Cooper's hawk *Accipiter cooperii*	CDFW watch list species, SSHCP covered species	Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently. Hunts in broken woodland and habitat edges. Nesting and foraging usually occur near open water or riparian vegetation. Frequents landscapes where wooded areas occur in patches and groves.	**Known to Occur**; trees surrounding Laguna Creek and along the collection lines provide suitable nesting habitat within the study area. During the January 2024 surveys and AECOM Biologists identified this species within the southern area.
Greater sandhill crane *Antigone canadensis tabida*	State listed as threatened, CDFW fully protected species, SSHCP covered species	Frequents annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. It prefers relatively treeless plains. Moist sites commonly used, but also feeds on dry plains far from water.	**Known to Occur**; agricultural land, cropland and seasonal wetland provide suitable wintering habitat as well as the grasslands surrounding the study area. Sandhill cranes were present during the January 2024 surveys and AECOM Biologists identified over 20 individuals within the study area.
Tricolored blackbird *Agelaius tricolor*	State listed as threatened, CDFW species of special concern, SSHCP covered species	Highly colonial. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Known to Occur**; blackberry thickets, cattails and bulrushes along the canal and the riparian area surrounding Laguna Creek have the potential to provide suitable habitat within the study area and the surrounding emergent wetlands. Large mixed black bird flocks were present during the January 2024 surveys and AECOM Biologists identified over 100 tricolored blackbirds within the study area. The nearest CNDDB record (#13) of nesting tricolored blackbird is on Frye Creek on the northern area.

Scientific Name Common Name	Regulatory Status[1] Federal/State/SSHCP Covered Species	Habitat	Potential for Occurrence
Western burrowing owl *Athene cunicularia* (*burrow sites and some wintering sites*)	State candidate for listing, SSHCP covered species	Open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Dependent on burrowing mammals, most notably, the California ground squirrel, for underground nests.	**Potential to Occur**; small mammal burrows were observed in the southern area at the time of the field survey and could provide suitable habitat. Irrigated pastures in the study area and surrounding grasslands provide suitable foraging habitat. The nearest CNDDB occurrence (#1024) is approximately 100-feet south of the collection lines.
Swainson's hawk *Buteo swainsoni*	State listed as threatened, SSHCP covered species	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Potential to Occur**; large trees surrounding Laguna Creek and along the collection lines provide suitable nesting habitat. Agriculture lands and surrounding grasslands provide suitable foraging habitat. The nearest CNDDB occurrence is of a nesting pair (#191), approximately 0.7 miles south of southern area.
Northern harrier *Circus hudsonius*	CDFW species of special concern, SSHCP covered species	Grasslands, meadows, marshes, and seasonal and agricultural wetlands/fields; prefer open habitats with adequate vegetative cover.	**Known to Occur**; agricultural fields, wetlands, and surrounding grasslands provide suitable habitat in the study area. During the January 2024 surveys, AECOM Biologists identified this species within the study area.
White-tailed kite *Elanus leucurus*	CDFW fully protected species, SSHCP covered species	Open grasslands, meadows, or marshes for foraging, close to dense-topped trees for nesting and perching. Nest trees may be growing in isolation, or at the edge of or within a forest.	**Known to Occur**; trees surrounding Laguna Creek and the collection lines provide suitable nesting habitat in the project area, Agriculture lands and surrounding grasslands provide suitable foraging habitat. Two CNDDB records (#21, #27) of the species nesting is approximately 0.7 miles to the northwest and north, respectively of the collection lines. During the January 2024 surveys, AECOM Biologists identified this species within the study area.

Scientific Name Common Name	Regulatory Status[1] Federal/State/SSHCP Covered Species	Habitat	Potential for Occurrence
Loggerhead shrike *Lanius ludovicianus*	CDFW species of special concern, SSHCP covered species	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches; they also require impaling sites for prey manipulation; makes the east side of the Cascades and Sierra Nevada ideal.	**Potential to Occur**; agricultural fields, riparian areas, and seasonal wetlands provide suitable nesting and foraging habitat within the study area. Numerous ebird reports within 0.25 miles of the study area (eBird 2024)
song sparrow – "Modesto" population *Melospiza melodia*	CDFW species of special concern	Moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging. Seems to prefer emergent freshwater marshes dominated by tules and cattails as well as riparian willow thickets.	**Potential to Occur**; blackberry thickets, cattails and bulrushes along the canal, riparian area surrounding Laguna Creek provide suitable nesting habitat in the study area.
Mammals			
Western red bat *Lasiurus blossevillii*	CDFW species of special concern, SSHCP Covered Species	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the Central Valley.	**Potential to Occur**; the trees surrounding Laguna Creek provide suitable roosting and the agricultural fields for foraging habitat for this species in the study area

Sources: AECOM 2024, CDFW 2024a, eBird 2024, Xerces 2024.

Notes:

CDFW = California Department of Fish and Wildlife

CNDDB = California Natural Diversity Database

SSHCP = South Sacramento Habitat Conservation Plan

Critical Habitat

Critical habitat is designated by the USFWS and defined as a geographic area that contains features essential to the conservation of a species listed as threatened or endangered under ESA and that may require special management considerations and protection. It represents the habitat that is essential to the species' recovery and may include areas not currently occupied by the species. Habitat need only contain one biological or physical feature necessary to the species to qualify as critical habitat. Section 7 of ESA requires that federal agencies ensure, through consultation with USFWS, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat.

There is no designated critical habitat in the proposed project site or vicinity. The nearest critical habitat is approximately 1.2 miles north of the 69 kV installation portion of the project site on Florin Road. This critical habitat is designated for the Sacramento Orcutt grass, Slender Orcutt gras, vernal pool tadpole shrimp, and vernal pool fairy shrimp (NMFS 2024, USFWS 2024b).

Sensitive Habitats and Sensitive Natural Communities

California natural communities are categorized by CDFW and partner organizations, such as CNPS, based on vegetation type classification, and are ranked using the same system to assign global and state rarity ranks for plant and animal species in the CNDDB. Natural communities that are ranked S1–S3 are considered sensitive natural communities by CDFW, to be addressed in the environmental review processes. Riparian habitat is defined separately in the context of Section 1600 of the California Fish and Game Code. According to guidance provided in *A Field Guide to Lake and Streambed Alteration Agreements: Section 1600 Fish and Game Code* (CDFG 1994), the outer edge of riparian vegetation is a reasonable and identifiable boundary for the lateral extent of a stream, the protection of which should result in preserving the fish and wildlife at risk within a stream or drainage, and therefore may constitute the limits of CDFW jurisdiction along waterways. The following sensitive natural communities were identified within the biological resources study area (CDFW 2024b).

- *Quercus lobata* Riparian Forest & Woodland Alliance; a S3/G3 community (described as mixed riparian forest above);
- Juncus (*effusus, patens*) – Carex (*pansa, praegracilis*) Herbaceous Alliance; a S3/G4 community (described as seasonal wetlands above); and
- Vernal pools (described as vernal pools above).

Connectivity and Migration Corridors

The Central Valley of California is the most important waterfowl wintering area in the Pacific Flyway, supporting 60 percent of the total duck and goose population and 20 percent of all North American wintering waterfowl, with rice fields providing particularly

important foraging and migratory stopover points for large numbers of resident and migratory avian species in the state (Shaffer 2001).

The perennial drainages that cross the project site connect natural riparian drainages to the east and west of the project site and may function as wildlife movement corridors through a landscape otherwise developed and used for agricultural production. The relatively undisturbed grassland habitats along edges of the project site, particularly along the collection and distribution line alignments and in the southern area of the project site, may also provide landscape connections for terrestrial species. In addition, preserve lands of the SSHCP are located immediately to the west of the project site.

Important Bird Areas and Flyways

The project site is situated approximately 4.5 miles north of the Cosumnes River Watershed Important Bird Area (IBA) (National Audubon Society 2022). The Cosumnes River is the only major river draining the western Sierra Nevada that remains entirely un-dammed and with a natural, snowmelt-fed flood regime. Managed by a consortium of non-profits and agencies, the Cosumnes protects over 45,000 acres of floodplain riparian woodland (both original and restored); grassland (including vernal pools); and freshwater wetland just south of Sacramento. Protected lands, including cooperative agricultural ventures and easements, extend from the confluence of the Cosumnes and the Mokelumne rivers (just west of Interstate [I-]5) then northeast to beyond I-99 to the town of Wilton east of Elk Grove. This area is a known stopover point for migratory birds along the Pacific Flyway.

The Cosumnes River is a year-round magnet for birds, including many sensitive species that have long been extirpated from most of the Central Valley. The preserve appears to also be important for summer (pre-migration) concentrations of raptors, Northbound shorebirds in spring regularly exceed 1,000 birds, with 8,500 recorded on one day in mid-April 1998. Songbird migration is also well-documented here (in contrast to many Central Valley sites), with counts of up to 50 Willow Flycatchers utilizing the riparian forest edge. In addition, sandhill crane are known to overwinter in the floodplain of the Cosumnes River and throughout the Delta region.

3.4.3 Environmental Impacts and Mitigation Measures

Potential impacts on biological resources resulting from implementation of the proposed project were determined based on the 30 percent design plans. These plans were informed by baseline technical studies, including for biological resources and wetlands and other WUS and WOS, and avoiding placing project design elements in areas supporting sensitive resources. While refined designs may be slightly different, the general location and extent of facilities would remain the same, thus the impact acreages determined by this methodology are considered representative.

Methods and Assumptions

The proposed project has the potential to adversely affect common and sensitive biological resources. Construction required to implement the project would result in ground-disturbing activities that could degrade and remove wildlife habitat, impact aquatic resources through sediment runoff, and cause auditory disturbance to wildlife. Once built, the project could result in impacts on common and special-status species due to ongoing operation and maintenance, as described below.

Potential impacts of the proposed project on biological resources were determined by:

1. overlaying the proposed project footprint (30 percent design), with maps of biological resources in the study area in geographic information system (GIS) layers;

2. determining impact acreages on the ground by land cover type through GIS calculations;

3. distinguishing between direct impacts (e.g., construction of project components such as solar panels, substation, etc.) and indirect impacts (resulting from habitat disturbance and introduction of human activities during construction, operation, and maintenance);

4. distinguishing between permanent impacts (built environment) and temporary impacts (during construction only); and

5. where applicable, applying species-specific protocols to assess impacts.

Details on the nature of the analysis and impact determination for each species are provided in the section below for each specific impact topic.

The project's potential impacts on biological resources include habitat loss, habitat fragmentation, disturbance, and potential injury or mortality of common and special-status species during construction, operation, and maintenance. Permanent habitat loss would occur in the permanent footprint of newly constructed permanent access roads, the BESS, substation and solar panel pilings, while temporary habitat loss would occur during construction only, with vegetation being allowed to establish following construction in areas such as under solar panels or in temporary construction access and laydown areas.

Disturbance to wildlife could also occur temporarily during construction if activities create visual or audible disturbances that would affect wildlife behavior in a way that would reduce their ability to forage, reproduce, and/or move through the area while construction activities are ongoing. Ongoing impacts on wildlife following buildout would occur as a result of additional human presence and activities in the area, including visual and noise disturbance that result from operation and maintenance. It should be noted that agricultural activities are currently ongoing at the site and will continue to go on following project implementation, thus only the occasional presence of operations and maintenance

personnel would be new and in addition to baseline activities, once construction is complete.

For purposes of this evaluation, it is assumed that permanent habitat loss as a result of conversion would occur in all areas to be occupied by the following project features:

- newly constructed permanent project access roads
- BESS
- Substation
- Solar panels footings would result in permanent on-the-ground conversion to hard surface infrastructure while the area under the panels would be used for grazing habitat; for the purposes of initial impact quantification, the entire solar panel footprint is considered conversion for the purposes of determining impacts by habitat type).

Exhibit 3.4-1 through Exhibit 3.4-5, above, show the habitat types at the project site overlaid with the project footprint, based on 30 percent concept design. The resulting potential habitat conversion acreages are summarized in Table 3.4-6, below. The 30 percent concept design was developed to avoid all direct impacts to vernal pools and seasonal wetlands mapped in the project site, as mapped during the *Aquatic Resources Delineation* (Appendix BR-1) and by including a 250-foot buffer around these features. Vernal pools and seasonal wetlands also occur along the 69kV lines. A 25-foot setback would be established around any seasonal wetlands that occur in the distribution line corridor to protect these wetlands from adverse effects during construction. Both buffers would be demarcated in the field during construction, but the demarcations would be removed following construction.

The impact acreages were calculated by projecting the project feature “footprint” over the habitat types present on the ground and quantifying the resulting acreages. It should be noted that the actual habitat conversion may be different as a result of further refined plans. The project would include up to 3.5 miles of new offsite 69 kV lines and up to 4 miles of reconductored existing overhead 69 kV lines. The overhead lines (including the overhead distribution lines and 0.5-mile-long overhead collector line that connects the northern and southern portions of the project site) would be designed to reduce raptor and other bird collisions and electrocutions in compliance with SMUD’s current Avian Protection Plan (APP) standards (SMUD 2016). Avian protection design standards and mortality reduction measures in the SMUD APP include installing flight diverters to increase overhead wire visibility in high-risk collision areas and using 60-inch clearance (minimum vertical separation of 36 inches from phase to ground on single-phase structures or 43 inches between energized conductors and ground on three-phase structures) pole design in eagle/raptor use areas.

In areas that would be occupied by solar panels, such as cropland and irrigated pasture, the outer perimeter of the solar panel footprint, as projected onto the underlying habitat type was included in the impact area, resulting in the maximum possible habitat conversion footprint calculated. In reality, only the foundation and posts of the solar panels would be installed on the ground, and much of the area would be seeded with pollinator friendly vegetation and used for irrigated pasture and/or pollinator habitat (where agricultural lands and irrigated pasture currently exist) once construction is completed. This use would allow continued agriculture/irrigated pasture and continued use by wildlife of these area underneath the solar panels. The acreages presented in Table 3.4-6, below present a likely conversion scenario based on the 30% design plans and are considered representative in terms of impact calculations. Actual impact acreages based on advanced designs may differ slightly.

Table 3.4-6. Permanent Impacts by Land Cover Type

Land Cover Type	Permanent Impacts (Acres)	Biological Resources Study Area Acreage
Roads, Disturbed, Developments	0.108	70.66
Blackberry thickets	0.00	0.06
Cropland	281.35	385.87
Irrigated Pasture	40.75	102.93
Riparian	0.00	0.90
Valley Grassland	0.25	63.85
Total	**322.45**	**624.27**

Source: AECOM 2024 Biological Resources Survey Report (Appendix BR-2); 30 percent design

The following assumptions were used in assessing the magnitude of possible impacts on biological resources:

- Staging (including vehicle parking), storage, and access areas would be restricted to designated areas within the project site or other existing developed sites.

- Direct impacts would result from installing permanent project components such as the BESS, substation, roads, and posts supporting solar panels where current land cover types would be converted to “developed” types. The area under the solar panels is also disclosed in the number, as the project footprint was projected onto current land cover types; however, it should be noted that the area under the solar panels would be used for irrigated pasture for sheep grazing and would be planted with pollinator friendly plant; thus, these areas would remain available for use by wildlife sheltering and foraging in irrigated pasture such as raptors and their prey. This is taken into account when determining mitigation ratios for habitat conversion.

- Indirect impacts to habitats would result from vegetation removal and grading, trenching for collection lines, stockpiling of material, and other disturbance of areas that would be revegetated or restored to pre-construction conditions. Indirect impacts

to habitat adjacent project elements would be avoided through establishment of appropriate buffers or by existing topographical barriers.

- Most impacts would occur during the approximately 18-month to two-year construction period; once constructed, activity at the site would be relatively low, related to maintenance and operations. Activities onsite during operations and maintenance would generally be expected to be similar to current farming operations, but the patterns of use may be different.

Thresholds of Significance

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. The proposed project site would result in a significant impact related to biological resources if they would do any of the following:

- 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.

Impact Analysis

Impact 3.4-1. Impacts on special-status plant species.

One special-status plant, Sanford's arrowhead, was identified within the project site within the collection line alignment that would connect the northern area with the southern area of the project site. Seven additional special-status plant species, including Dwarf Downingia, Boggs Lake hedge-hyssop, Ahart's dwarf rush, legenere, pincushion navarretia, Slender Orcutt grass, and Sacramento Orcutt grass, have potential to occur

within the vernal pool habitat in the project site. However, the project design avoids all vernal pools in the project area, including a 250-foot buffer; therefore, the project is not expected to result in impacts on special-status plant species occurring in vernal pools, even if they were present on the project site.

Sanford's arrowhead

Sanford's arrowhead was observed in an agricultural ditch on the northern area of the project site along the proposed collection line alignment, on June 10, 2024. Surveys were not conducted during the blooming period for this species on the southern area; however, there is suitable habitat for Sanford's arrowhead in the reservoir on the southern area outside of the project footprint, within the large agricultural ditches with standing water, and within Laguna Creek.

Installation of the overhead collection line connecting the northern area to the southern area could result in direct harm to a known occurrence of Sanford's arrowhead if they were installed in the areas supporting plants. Excavation associated with the installation of the power poles using a truck-mounted machine auger, or trampling resulting from mobilizing construction equipment or construction workers could result in impacts on additional occurrences of Sanford's arrowhead. Construction could result in indirect impacts to these species, through the alteration of hydrology or from construction runoff. However, poles of the overhead collector lines would not be placed in suitable habitat for Sanford's arrowhead such as marshes, ponds or ditches, and the presence on the species will be taken into consideration during design of pole locations to avoid impacts.

Sanford's arrowhead has not been detected elsewhere within the project site, but this species could occur within agricultural ditches within the southern area. Limited project impacts may occur in an agricultural in the southwestern corner of the southern area, where culvert improvements are likely. This would be considered a **potentially significant** impact to Sanford's arrowhead, if present in this location.

Mitigation Measures

Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

SMUD shall prepare a Worker Environmental Awareness Program (WEAP) that shall educate staff regarding the presence or potential presence of all special-status species, sensitive natural communities, and protected wetlands and other waters that are known to occur, within the project site. The program shall describe species and sensitive community identification, special-status species habitat requirements, and penalties for special-status species impacts, as well as immediate steps to take should special-status species be observed by staff onsite.

This WEAP shall include biological resource avoidance and minimization measures/mitigation measures from the project's CEQA Mitigation Monitoring and Reporting Program (MMRP), and any resource permits, as applicable. The WEAP

shall educate workers regarding sensitive species and their habitats, the need to avoid impacts, state and federal protection status, and the legal implications of violating environmental laws and regulations. The WEAP can be provided in the form of a handout and/or video presentation. All staff working onsite shall attend the WEAP training prior to commencing onsite work. Staff that attend the training shall fill out a sign-in sheet indicating that they completed the training.

Prior to construction, a qualified biologist shall inspect all areas within the project site with the potential to support sensitive biological resources to ensure the proper implementation of all avoidance and minimization and mitigation measures, agency permit requirements, and environmentally sensitive area exclusion flagging and/or fencing have been properly implemented, and to deliver WEAP training, as needed.

The biologist shall remain available on an on-call basis for the duration of project construction to conduct inspections and follow up surveys, as needed or required by permit conditions, and to ensure compliance with permit conditions. The biologist shall have the experience, education and training necessary to conduct special-status species surveys and monitoring as described in the mitigation measures below.

Mitigation Measure 3.4-2. Conduct Pre-construction Surveys for Sanford's Arrowhead and Avoid Impacts to Known Occurrences

Prior to culvert improvements or other project work that may affect the agricultural drainage in the southern area that provides suitable habitat for Sanford's arrowhead, and within the blooming period for Sanford's arrowhead (May 1 through October 1), a qualified botanist shall conduct a focused survey for the species within suitable habitat in this area. The botanist shall map all observations of this species and establish a no-disturbance buffer around these plants. Before construction commences, Sanford's arrowhead occurrences shall be marked with pin flags in the field, and all construction personnel shall be instructed as to the location and extent of the special-status plants or populations and the importance of avoiding impacts to the species and its habitat.

If construction must occur within the no-disturbance buffer, and Sanford's arrowhead cannot be avoided, SMUD shall develop a mitigation plan for Sanford's arrowhead in coordination with CDFW. The plan shall include measures to minimize impacts and to offset any loss of Sanford's arrowhead on a 1:1 basis through protection, replanting, or purchase of credits. The plan shall be in place prior to construction activities in these areas.

Information about avoidance and minimization measures for Sanford's arrowhead shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Significance After Mitigation

Implementing Mitigation Measures 3.4-1 (WEAP Training) and 3.4-2 (Sanford's Arrowhead Protection) would avoid or minimize impacts on Sanford's arrowhead by establishing no-disturbance buffers and instructing construction personnel on how to respect the no-disturbance buffers, and the implications for not following these buffers. If impacts were unavoidable mitigation measure 3.4-2 provides provisions for offsetting potential loss of Sanford's arrowhead. Implementation of Mitigation Measures 3.4-1 and 3.4-2 would reduce this impact to **less than significant**.

Other special-status Plants

Seven additional special-status plant species were identified to have a moderate to high potential to occur within the vernal pool habitat within the project site, including Dwarf Downingia, Boggs Lake hedge-hyssop, Ahart's dwarf rush, legenere, pincushion navarretia, Slender Orcutt grass, and Sacramento Orcutt grass.

Construction of the PV solar panels, BESS, and substation within the northern area and the southern area of the project site would be set back from all vernal pools by 250 feet. This setback distance is designed to avoid construction-related direct and indirect impacts to vernal pools. Therefore, direct and indirect impacts to vernal pools and the plant species that may inhabit these vernal pools are not expected to occur.

0.75 acres of vernal pool habitat is present within 25 feet of the proposed distribution line alignment. Construction activities associated with the proposed distribution and collection lines would involve installation of new wooden or metal poles, installing new conductor along the poles, and reconductoring existing lines. Installation of the new and reconductoring of the existing collection and distribution systems would occur outside of the boundaries of all identified vernal pools. Therefore, direct impacts to vernal pool species are not anticipated. However, construction could result in indirect impacts to these species, through the alteration of hydrology or from construction runoff. Changing the hydrology or introducing hazardous materials runoff could result in mortality (take) of these species. This would potentially result in indirect impacts to for these species, if present and would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines

Along the collection line connecting the northern area to the southern area of the project site, and the distribution lines along Florin Road, Excelsior Road, Gerber Road, and Eagles Nest Road, SMUD or their contracted engineer shall design the placement of new electricity poles and replacement of existing poles to avoid the edges of vernal pools by at least 50 feet.

The perimeter of this 50-foot no-disturbance buffer shall be marked in the field prior to construction through flagging of fencing with a wildlife friendly material that allows the movement of wildlife, including western spadefoot (and also wide-ranging wildlife, such as coyotes), through the area. The marked buffer shall be maintained for the duration of project construction. No construction or ground-disturbing activities shall occur within the 50-foot buffer.

Information about avoidance and minimization measures for vernal pool habitat shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Significance After Mitigation

Implementing Mitigation Measure 3.4-3 (Vernal Pool Buffers) would avoid indirect impacts to vernal pools and the plant species that inhabit them, by requiring the placement of new wood or metal poles to be at least 50 feet away from mapped vernal pools. Implementation of Mitigation Measure 3.4-3 (Vernal Pool Buffers) would reduce this impact to **less than significant**.

Impact 3.4-2. Potential impacts on vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, and Ridsecker's water scavenger beetle and impacts to their habitat during construction.

Three special-status invertebrates, including three crustaceans (vernal pool fairy shrimp, Midvalley fairy shrimp, and vernal pool tadpole shrimp) and one insect covered under the SSHCP (Ridsecker's water scavenger beetle), have potential to occur within the vernal pool habitat in the project site.

Construction of the PV solar panels, BESS, and substation within the northern area and the southern area would be set back from all vernal pools by 250 feet. This setback distance is designed to avoid construction-related impacts to vernal pools. Therefore, impacts to vernal pools and the plant and animal species that may inhabit these vernal pools, are not expected to occur.

0.75 acres of vernal pool habitat is present within 25 feet of the proposed distribution line alignment. Construction activities associated with the proposed distribution and collection lines would involve installation of new wood or metal poles, installing new conductors along the poles, and reconductoring existing lines. Installation of the poles for the new and reconductored distribution and overhead collector lines would occur outside of the boundaries of all identified vernal pools. Therefore, direct impacts to vernal pool species are not anticipated. However, construction could result in indirect impacts to these species, through the alteration of hydrology or from construction runoff. Changing the hydrology or introducing toxins could result in mortality (take) of these species, and could displace Ridsecker's water scavenger beetle. This would potentially result in indirect impacts to habitat for these species and would be a **potentially significant** impact.

Mitigation Measures

Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines

Significance After Mitigation

Implementing Mitigation Measure 3.4-3 (Vernal Pool Buffers) would avoid impacts to vernal pools and the species that inhabit them, by requiring the placement of new wooden or metal poles to be at least 50 feet away from mapped vernal pools. Implementation of Mitigation Measure 3.4-3 (Vernal Pool Buffers) would reduce this impact to **less than significant.**

Impact 3.4-3. Loss of habitat and potential impacts on monarch butterfly during construction.

The Monarch butterfly has the potential to forage within the approximately 64 acres of valley grassland habitat within the project site. During the breeding season, Monarch butterflies lay eggs exclusively on milkweed plants and Monarch caterpillars feed only on milkweed leaves. If milkweed were present within the project site, project activities could convert and destroy suitable habitat for Monarch caterpillars which could in turn result in direct impacts to Monarch butterflies if present. Field surveys were conducted outside of the blooming period for milkweed; therefore, the presence and distribution of milkweed within the grasslands of the project site is as yet unknown.

Construction

No project components would occur in the large stand of valley grassland along the northern border of the southern area; therefore, no impacts to monarch butterfly or their host plants would occur as a result of project construction in this area. Small amounts of valley grassland may be temporarily disturbed during pole placements in the distribution line corridor, and it is as yet unknown whether milkweed occurs in these small patches. However, any impacts on these grassland patches and potentially associated potential Monarch butterfly foraging habitat (if milkweed were present) are small (footprint of poles only) and would be temporary. After construction, the pole placement sites would be restored to pre-project conditions.

Thus, direct impacts such as mortality and injury of individual adults, eggs (laid on milkweed plants), and larvae (feeding on milkweed plants) are highly unlikely. Furthermore, any conversion and disturbance of suitable habitat in the distribution line corridor is unlikely and development of the proposed project would not permanently convert suitable monarch butterfly habitat, which, if occupied, could result in direct injury and mortality of individuals. Therefore, construction impacts on Monarch butterfly and their habitat would be **less than significant**.

Operation

During operation, the project would continue to use the land for agricultural activities through continued grazing within the project site and installation of pollinator friendly vegetation. The grassland in the northern part of the southern area of the site would continue to be used for dryland grazing. Vegetation in the valley grassland and irrigated pasture under the PV panels would continue to provide suitable habitat for Monarch butterflies and milkweed. Grazing livestock may negatively impact milkweed by grazing it down making it unsuitable for Monarch butterflies to lay eggs, or eating larvae and caterpillars that are on the plants. However, much of the land is already being used for grazing or farming activities, so this would not represent a change from baseline conditions. Operational impacts to any host plants of adult or larvae of Monarch butterflies would be **less than significant.**

Impact 3.4-4. Potential impacts on Western spadefoot during construction.

Western spadefoot has potential to occur within the vernal pools and surrounding grassland habitat within the project site. Development could impact Western spadefoot if this species is present within the project site during construction. Vernal pools, seasonal wetlands, and swales throughout the project area represent suitable breeding habitat and grasslands provide suitable upland habitat for western spadefoot

Construction

Construction of the PV solar panels, BESS, and substation within the northern area and the southern area would be setback from all vernal pools by 250 feet. This setback distance is designed to avoid construction-related impacts to vernal pools. Therefore, impacts to Western spadefoot breeding habitat, as well as Western spadefoot eggs and tadpoles, are not expected to occur in the northern and southern areas of the project site.

Suitable upland habitat for Western spadefoot (e.g., grasslands within 1,200 feet of suitable aquatic habitat) exists along the northern edge of the southern area of the project site. However, any Western spadefoot seeking refuge within this grassland would not be directly or indirectly impacted because project elements have been designed to completely avoid this area and construction activities (including staging and stockpiling) would occur outside of this land cover type. Therefore, in the southern area, there would be no risk of direct impacts such as construction-related injury or mortality; nor would there be any direct impacts such as loss of suitable upland habitat.

Approximately 4.7 acres of valley grassland habitat potentially suitable as upland habitat for western spadefoot (e.g., grasslands within 1,200 feet of suitable aquatic habitat) is also present along the distribution line and collection line alignments.

The distribution line alignment is within the existing road rights-of-way. The valley grassland that borders this alignment and existing rights-of-way is not expected to provide high quality upland habitat for Western spadefoot, due to its fragmented nature and proximity to busy roadways.

Construction activities associated with poles for the proposed overhead collector line that would connect the northern and southern areas of the project site could result in impacts to Western spadefoot. These construction activities would involve installation of new wood or metal poles and installing new aboveground circuits along the poles. If present in this alignment during construction, Western spadefoot could become entrapped in open pits associated with excavation for the poles. Additional direct impacts on Western spadefoot could include mortality related to an increase in vehicular traffic, mortality from earth-moving activities within the overhead collection and distribution line corridors, and noise and vibration disturbance causing toads to break dormancy. Indirect impacts to Western spadefoot associated with loss of habitat would be minimal, as the construction footprint would be restricted to the footprints of the metal or wood poles. While unlikely, impacts to Western spadefoot during construction would be **potentially significant**.

Approximately 0.75 acres of vernal pool habitat is present within 25 feet of the proposed distribution line alignment. Construction activities associated with the proposed distribution and collection lines would involve installation of new wood or metal poles, installing new aboveground circuits along the poles, and reconductoring existing lines. Installation of the new and reconductoring of the existing collection and distribution systems would occur outside of the boundaries of all identified vernal pools. Therefore, direct impacts to Western spadefoot eggs and tadpoles are not anticipated. However, indirect impacts to Western spadefoot eggs, tadpoles, and breeding habitat could occur from alteration of the hydrology of these features or from construction and operation runoff, resulting in degradation or loss of suitable habitat. Changing the hydrology or introducing hazardous materials runoff from construction could result in mortality (i.e., take) of this species. This would potentially result in indirect impacts to up to 0.75 acres of aquatic habitat for this species and would be a **potentially significant** impact.

Operation

Project operations would not occur in the valley grassland present within the project site because these areas do not contain project-related components that would require maintenance. Therefore, no direct impacts (e.g., injury or mortality) to Western spadefoot occupying nearby grassland would occur. Furthermore, project operations would not result in the loss of upland habitat for Western spadefoot. Therefore, no direct or indirect impacts to western spadefoot are anticipated during project operations. **No impact** would occur.

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines

Mitigation Measure 3.4-5. Avoid impacts to Western Spadefoot during Construction

Prior to any ground disturbance activity (e.g., grading, disking, road construction, or similar activities that could entomb or excavate spadefoot in grassland habitat near vernal pools) in the overhead collector line and distribution line corridors, a qualified biologist shall survey the project footprint prior to the onset of work for Western spadefoot. The qualified biologist shall identify burrows potentially suitable for Western spadefoot and mark a 50-foot non-disturbance buffer around any burrows mapped. Ground disturbance in these buffer areas shall be avoided, if feasible. If ground disturbance would be required within the 50-foot buffer, activities shall be limited to the minimum footprint necessary and shall be monitored by a qualified biologist, who would be either on-call or onsite, as appropriate to guide activities within the buffer to reduce impacts.

The qualified biologist shall inform construction personnel to stop construction activities if a Western spadefoot is observed or if, in the biologist's opinion, maintenance activities threaten to cause adverse effects to Western spadefoot. If it is determined that Western spadefoot would be potentially harmed by construction, a qualified biologist may relocate animals to suitable habitats outside the project footprint.

Information about avoidance and minimization measures for Western spadefoot shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Significance After Mitigation

Implementing Mitigation Measures 3.4-1 (WEAP Training), 3.4-3 (Vernal Pool Buffer), and 3.4-5 (Western Spadefoot Protection) would reduce potentially significant impacts on Western spadefoot during construction because these measures would protect suitable habitat, minimize direct mortality by establishing no-disturbance buffers around burrows suitable for Western spadefoot, and instructing construction personnel on how to respect the no-disturbance buffers, and the implications for not following these buffers. Implementation of Mitigation Measures 3.4-1 (WEAP Training), 3.4-3 (Vernal Pool Buffer), and 3.4-5 (Western Spadefoot Protection) would reduce impacts to **less than significant**.

Impact 3.4-5. Potential impacts on Western pond turtle during construction.

Western pond turtle has the potential to occur within Laguna Creek, freshwater ponds, and surrounding grasslands within the project site and project development could impact Western pond turtle if this species is present within the project site.

Western pond turtle forages in ponds, marshes, slow-moving streams, and sloughs, where there is open water. The species nests in nearby uplands with low, sparse vegetation, such as grassland.

Construction

Within the project site, there is 0.11 acre of suitable aquatic habitat within Laguna Creek along the collection line alignment and 2.85 acres of suitable aquatic habitat adjacent to, but outside of, the project footprint within the open water reservoir on the southern area. Construction of the overhead collector line that would connect the northern area to the southern area would not result in the loss of any aquatic habitat. Additionally, installation of poles and overhead lines would not occur within the bed or banks of Laguna Creek, and, therefore, Western pond turtles using this aquatic habitat would not be at risk of mortality due to mobilizing construction equipment. Furthermore, development on the southern area would avoid the reservoir, so direct impacts to this waterway due to permanent fill would be avoided. At both Laguna Creek and the reservoir in the southern area, ground-disturbing construction activities occurring adjacent to these aquatic features may result in sedimentation and water quality impacts on nearby waterways. Construction could likewise result in adverse impacts on water quality in nearby aquatic habitat occupied by pond turtles, including transport of sediment (erosion) and runoff of contaminants (e.g., fuel, lubricants). Construction could result in indirect impacts to up to 2.96 acres of aquatic habitat suitable for western pond turtle.

Suitable upland habitat for Western pond turtle (e.g., grasslands within 1,200 feet of suitable aquatic habitat) is also present within the valley grassland along the distribution and collection alignments as well as in the southern area, just north of the project footprint.

The distribution line alignment is within the existing road rights-of-way. The valley grassland that borders this alignment and existing rights-of-way is not expected to provide high quality upland habitat for Western pond turtle, due to its fragmented nature and proximity to busy roadways.

Furthermore, any Western pond turtle seeking refuge within the large expanse of valley grassland in the southern area would not be directly or indirectly impacted. No construction activities (including staging and stockpiling) would occur within this land cover type. In the southern area, no direct impacts such as construction-related injury or mortality, or indirect impacts such as loss of suitable upland habitat, would occur.

Approximately 4.7 acres of valley grassland habitat are present along the overhead collection line alignment and are suitable as upland habitat for western pond turtle. Construction activities associated with the proposed collection line that runs between the

northern and southern areas of the project site could result in direct impacts to Western pond turtle. These construction activities would involve installation of new wood or metal poles and installing new aboveground circuits along the poles. Western pond turtles could be crushed and killed during construction activities within suitable upland habitat (annual grassland), typically within 1,500 feet of aquatic habitat. Additionally, hatchlings or eggs in pond turtle nests could be crushed and killed during the movement of construction equipment in these habitat areas during the western pond turtle nesting season (generally, March to November). Indirect impacts to Western pond turtle associated with loss of habitat would be minimal, as the construction footprint would be restricted to the footprints of the metal or wood poles, which will be spaced 250 feet apart. Impacts to Western pond turtle during construction would be **potentially significant**.

Operation

Project operations would avoid the valley grassland present within the project site. Therefore, no direct impacts (e.g., injury or mortality) to Western pond turtle occupying nearby grassland would occur. Furthermore, project operations would not result in the loss of upland habitat for Western pond turtle. Direct or indirect impacts to Western pond turtle are not anticipated during project operations. **No impact** would occur.

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Mitigation Measure 3.4-6. Conduct Pre-Construction Surveys for Western Pond Turtle

A qualified biologist shall conduct a pre-construction survey for Western pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable aquatic habitat (e.g., any adjacent waterway, marsh, or emergent wetland).

Concurrently with the pre-construction survey, searches for nesting sites in suitable upland habitat shall be conducted by a qualified biologist and any active nest sites identified during the survey shall be delineated with high-visibility flagging or fencing and avoided during construction activities as described below in Mitigation Measure 3.4-7.

Mitigation Measure 3.4-7. Avoid Impacts on Western Pond Turtle during Construction

Project ground-disturbing activities near suitable breeding habitat shall be conducted outside of Western pond turtle's active breeding and dispersal season (i.e., after May 1 and before September 15), to the extent feasible. If project activities must be implemented during the breeding season, they shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset.

If a turtle nest is encountered during the pre-construction survey (Mitigation Measure 3.4-6), a 100-foot non-disturbance buffer shall be maintained during construction and regularly monitored by a qualified biologist. Construction may resume in the buffer area after the qualified biologist has determined that the turtle eggs have hatched.

Onsite personnel shall observe a 20-mile-per-hour speed limit at all times. In addition, all BMPs identified in the project's Stormwater Pollution Prevention Plan shall be implemented, to avoid adverse effects from water quality impacts suck as sedimentation and spills.

Information about avoidance and minimization measures for Western pond turtles shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Significance After Mitigation

Implementing Mitigation Measures 3.4-1 (WEAP Training), 3.4-6 (Western Pond Turtle Pre-construction Measures), and 3.4-7 (Western Pond Turtle Construction Measures) would reduce significant impacts on western pond turtle during construction because these measures would minimize direct mortality. Implementation of Mitigation Measures 3.4-1 (WEAP Training), 3.4-6 (Western Pond Turtle Pre-construction Surveys), and 3.4-7 (Western Pond Turtle Avoidance Measures during Construction) would reduce impacts to **less-than-significant**.

Impact 3.4-6. Potential impacts on giant garter snake during construction and impacts to their aquatic habitat.

Giant garter snake has potential to occur within agricultural ditches, and adjacent uplands (up to 200 feet) present within and adjacent to the project site This species inhabits agricultural wetlands (such as rice fields) and waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Most of the giant garter snake's natural habitat has been lost, which is why the species commonly inhabits seasonally flooded agricultural water features such as ditches. Giant garter snakes are dormant during the winter, when they inhabit small mammal burrows and other soil crevices above flood elevations during this inactive period. The snakes typically select burrows with sunny exposure along south and west facing slopes (Hansen et al. 2017). Upland habitat within 200 feet of suitable aquatic habitat is considered suitable wintering habitat.

Construction

Development of the project would not result in the permanent impacts on agricultural canals or other drainages in the Project site that would provide suitable habitat for giant garter snake. The project has been designed with 100-foot buffers along the agricultural canal and other ditches on the project site. Placement of power poles for distribution lines would also avoid the immediate banks of Laguna Creek or other suitable aquatic habitat in perennial drainages. Indirect construction-related impacts to waterways, such as

sedimentation and runoff of contaminants (e.g., fuels and lubricants), would be avoided through implementation of BMPs as required for stormwater management during construction.

While the project would not result in loss of giant garter snake aquatic habitat, temporary construction activities within the 200 feet upland buffer along agricultural ditches on the project site and near Laguna Creek and other perennial drainages in the project area could present a risk of mortality (e.g., construction vehicles crushing giant garter snakes basking on roads, direct impacts). This risk would be reduced if construction within this upland buffer occurred during the active season (May 1 to October 1) when giant garter snakes can move away from and avoid impacts from construction activities. Mortality or injury of a giant garter snake would be considered a **potentially significant** impact.

Operation

Development of the project would not result in the permanent loss of agricultural canals, and therefore the project would not result in the loss of aquatic habitat for giant garter snake. Post construction the project would also not result in the loss of or encroachment to suitable upland habitat within 200 feet of aquatic habitat. During project operation, giant garter snakes could wander onto the project site and potentially bask on roads where they would be vulnerable to injury or mortality from vehicles. However, these occurrences are anticipated to be rare because giant garter snakes do not generally move far from aquatic habitat. Furthermore, maintenance traffic, such as occasional repair or washing of broken or dirty PV panels, would be subject to onsite speed limits. Impacts to giant garter snake from maintenance activities during operation would be **less than significant.**

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Mitigation Measure 3.4-8. Conduct Pre-construction Surveys for Giant Garter Snake and Implement Avoidance and Minimization Measures

Project ground-disturbing activities in aquatic habitat and adjacent upland habitat within 200 feet of suitable aquatic habitat (perennial drainages and agricultural ditches carrying year-round water) shall be conducted during the giant garter snake's active season (i.e., after May 1 and before October 1), to the extent feasible. During this period, the potential for direct mortality is reduced, because snakes are expected to mainly occupy aquatic habitat and to actively move and avoid danger. If project activities in upland habitat occur within 200 feet of suitable aquatic habitat must be started outside of the snake's active season (May 1 to October 1), the following mitigation measures must be implemented:

- Within 24-hours prior to commencement of construction activities within 200 feet of potential giant garter snake habitat (perennial streams and agricultural ditches that carry year-round water), the site shall be inspected by a qualified

biologist who is approved by the CDFW and USFWS. Results of this clearance survey shall be reporting in memo shared with SMUD and construction should only commence after a negative inspection report. If construction activities are delayed or stop for a period of two weeks or more, another pre-construction clearance survey shall be conducted within 24 hours before resuming construction activity. If snakes, or evidence of snakes, are encountered during pre-construction surveys, a biological monitor shall be present during the commencement of construction activities in upland habitat within 200 feet of suitable aquatic habitat during the non-active season. If any snakes are observed in uplands near drainages during the active season, project activity shall be halted and the snakes shall be allowed to leave the area on their own.

Significance After Mitigation

Implementing Mitigation Measures 3.4-1(WEAP Training) and 3.4-8 (Giant Garter Snake Protection) would reduce significant impacts on giant garter snake because these measures would protect suitable aquatic habitat and water quality and include preconstruction surveys if work started in the inactive season near suitable aquatic habitat. With implementation of Mitigation Measures 3.4-1 (WEAP Training) and 3.4-8 (Giant Garter Snake Protection), impacts would be reduced to **less-than-significant**.

Impact 3.4-7. Potential impacts on burrowing owl during construction and operation.

Suitable breeding and overwintering habitat for western burrowing owl is present in the grasslands and agricultural areas in the project site. Annual grassland throughout the project site represents suitable nesting and foraging habitat for burrowing owls. Annual grassland and agricultural fields at the project site could support breeding and wintering burrowing owls in areas where suitable burrows are present. Burrowing owls are also known to use culverts for sheltering during winter. Wintering burrowing owls have been occasionally observed on the project site by the landowners. Protocol-level burrowing owl surveys consisting of a habitat assessment and two rounds of surveys for wintering owls have been conducted, documenting several wintering burrowing owls at the project site (Appendix BR-3).

Construction

Project construction activities, such as grading access roads , during the breeding season (generally February 1-August 31) for burrowing owls could result in the excavation or collapse of occupied burrows containing adults, nestlings, or eggs, if present. Additionally, construction-generated noise and increased human presence have the potential to disturb burrowing owls nesting near construction activities. Disturbance of active breeding owls could result in nest abandonment or direct loss of adults, fledglings, or eggs. Burrowing owls need burrows at all times to survive and displacing individuals from their burrows can result in indirect impacts such as predation, increased energetic costs, increased stress, and risks associated with having to find and compete for burrows, all of which can lead to take or reduced reproduction. Burrowing owls using burrows, culverts,

or other cover habitat during the wintering season that could also be directly affected by construction activities if those areas are disturbed. Active wintering burrows have been recently documented reported within the project site (Appendix BR-3); within the grassland habitat on the southern area of the project site and the landowners have reported casual observations of wintering owls.

Within the project site, burrowing owls could forage within the cropland, irrigated pasture, and valley grassland that would be impacted by project construction, totaling 322 acres (see Table 3.4-6). Grading and construction on approximately 322 acres would temporarily eliminate foraging habitat for western burrowing owl in areas that are suitable foraging habitat. Post-construction, the majority of the site would be vegetated with grazing and pollinator friendly vegetation, with the exception of the footprints for the substation and BESS, totaling approximately 4.1 acres. In addition, 36.69 acres of irrigated pasture are located under the power block on the southern parcel and would not be available for foraging during construction. The permanent loss of 4.1 acre of available foraging habitat due placement of permanent structure and the temporary loss of 36.67 acres of irrigated pasture due to grading and construction would not result in a significant impacts to wintering western burrowing owls because the loss would be largely temporary, and there is readily available suitable foraging habitat adjacent to the project site within the grassland areas to the north and west of the project site.

Construction-related disturbance resulting in the loss of reproductive success of an active burrowing owl pair for one year could have a significant impact on the local population. Loss of burrowing owls would be a **potentially significant** impact.

Operation

Operation and maintenance activities are described in Chapter 2, “Project Description.” During the operations phase of the project, if present, western burrowing owls could be disturbed by operations and maintenance vehicles or equipment Squirrel burrows suitable for burrowing owl were observed within the grassland habitat on the southern area and the landowners have occasionally observed single owls on the site during the winter. In addition, protocol level habitat assessment and wintering owl surveys recently documented the presence of wintering owls at the project site (Appendix BR-3).

If burrowing owls were breeding at the site over the 35-year lifespan of the project, impacts to breeding burrowing owls could include operation-related disturbance to nesting owls. Visual or auditory disturbance from vehicle use or human presence near nesting burrowing owls could result in nest abandonment or failure by deterring birds from preferred foraging sites or could prevent adults from caring for eggs or chicks. However, breeding activity at the project site is unlikely given the scarcity of burrowing owl nesting records in or near the project site. If burrowing owls established nests at the project site in the future, disturbance of these owls would be unlikely because human presence and maintenance activities would be minimal during the operations and maintenance phase of the project. Regular maintenance activities would not be expected to cause disturbance that would result in mortality of western burrowing owl.

No annual grassland habitat would be converted to solar fields. Once construction is complete, burrowing owls would be able to use the solar field project site and winter or nest in suitable habitat throughout the site. Furthermore, there are large expanses of grassland habitat to the north and west of the project site, including permanently preserved lands. Thus, nesting and foraging habitat in the project vicinity is not expected to be a limiting resource. The area under to solar panels would be established as irrigated pasture and planted with pollinator friendly vegetation that would support insects. Thus, the area under the solar panels would have similar foraging values to burrowing as the croplands and irrigated pasture currently occupying these sites.

Operation-related disturbance resulting in the loss of breeding success of an active burrowing owl pair is unlikely. This impact is **less than significant**.

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Mitigation Measure 3.4.9 Compensate for permanent loss of Western Burrowing Owl Habitat.

- SMUD shall mitigate for the permanent loss of 4.1 acres of burrowing owl foraging habitat at a 1:1 basis. This may be achieved through purchasing credits at an approved bank, dedicating credits at SMUD's own conservation bank, or by placing a permanent easement on 4.1 acres of suitable foraging habitat in the vicinity of the project site.

Mitigation Measure 3.4-10. Conduct Pre-construction Surveys for Western Burrowing Owl and Implement Avoidance and Minimization Measures

- SMUD shall conduct pre-construction burrowing owl surveys in all areas that may provide suitable nesting habitat according to CDFW (CDFG 2012) guidelines and based on protocol level surveys conducted in support of this project. (Appendix BR-3). A qualified wildlife biologist shall conduct the surveys, including documentation of burrows and burrowing owls, in all suitable burrowing owl habitat within 500 feet of proposed construction.

- Two surveys shall be conducted within 15 days prior to ground disturbance to establish the presence or absence of burrowing owls. The surveys shall be conducted at least 7 days apart (if burrowing owls are detected on the first survey, a second survey is not needed) for both breeding and non-breeding season surveys. All burrowing owls observed shall be counted and mapped.

- During the breeding season (February 1 to August 31), surveys shall document whether burrowing owls are nesting in or within 500 feet of project construction activities.

- During the non-breeding season (September 1 to January 31), surveys shall document whether burrowing owls are using habitat in or directly adjacent (within 500 feet) to any area to be disturbed. Survey results would be valid only for the season (breeding or non-breeding) during which the survey was conducted.

- The qualified biologist shall survey the proposed footprint of disturbance and a 500-foot buffer from the perimeter of the proposed footprint to determine the presence or absence of burrowing owls. The site shall be surveyed by walking line transects, spaced 20 to 60 feet apart, adjusting for vegetation height and density. At the start of each transect and, at least, every 300 feet, the surveyor, with use of binoculars, shall scan the entire visible project site for burrowing owls. During walking surveys, the surveyor shall record all potential burrows used by burrowing owls, as determined by the presence of one or more burrowing owls, pellets, prey remains, whitewash, or decoration. Some burrowing owls may be detected by their calls; therefore, observers shall also listen for burrowing owls while conducting the survey.

- The presence of burrowing owl or their sign anywhere on the site or within the 500-foot accessible buffer around the site shall be recorded and mapped. Surveys shall map all burrows and occurrence of sign of burrowing owl on the project site. Surveys must begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites.

If a burrowing owl or evidence of presence at or near a burrow entrance is found to occur within 500 feet of the project site, the following measures shall be implemented:

- If burrowing owls are found during the breeding season (approximately February 1 to August 31), the project applicant shall:

    - Avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging).

    - Establish a 500-foot non-disturbance buffer zone around nests. The buffer zone shall be flagged or otherwise clearly marked. Should construction activities cause the nesting bird to vocalize, make defensive flights at intruders, or otherwise display agitated behavior, then the exclusionary buffer shall be increased such that activities are far enough from the nest so that the bird(s) no longer display this

agitated behavior. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

- Construction may occur only outside of the 500-foot buffer zone during the breeding season and only if a qualified biologist monitors the nest and determines that the activities will not disturb nesting behavior, or the birds have not begun egg-laying and incubation, or that the juveniles from the occupied burrows have fledged and moved off site. Measures such as visual screens may be used to further reduce the buffer with CDFW approval and provided a biological monitor confirms that such measures do not agitate the owls.

- If burrowing owls are found during the non-breeding season (approximately September 1 to January 31), the project applicant shall establish a 160-foot buffer zone around active burrows. The buffer zone shall be flagged or otherwise clearly marked. Measures such as visual screens may be used to further reduce the buffer with CDFW approval and provided a biological monitor confirms that such measures do not agitate the owls.

- During the non-breeding season only, if a project cannot avoid occupied burrows after all alternative avoidance and minimization measures are exhausted, as confirmed by CDFW, project applicant shall obtain an Incidental Take Permit (ITP) for the project. A burrowing owl exclusion plan must be developed by a qualified biologist consistent with the most recent guidelines from CDFW (e.g., California Department of Fish and Game 2012) and submitted to and approved by CDFW along with the ITP application. Burrow exclusion may not be conducted for burrows located in the project footprint and within a 160-foot buffer zone until the ITP is obtained. All ITP conditions must be followed when excluding owls.

Information about the status of and avoidance and minimization measures for western burrowing owl shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Mitigation Measure 3.4-11. WEAP Training for Operations and Maintenance Personnel

Following project construction, WEAP Training pertaining to the operation and maintenance phase of the project shall be provided each year to onsite personnel. The purpose of the training shall be to raise awareness of the potential use of the site by wintering and breeding burrowing owls and to avoid and minimize potential take of owls during project operation. The training shall describe the identification and natural history of burrowing owls and shall cover the avoidance and minimization measures described below. New onsite personnel shall be provided the training before they begin work at the site.

- **Speed Limit.** All project traffic must observe a 20-mph speed limit.

- **Pets.** No pets are allowed on the project site.

- **Equipment and Material Inspection.** All construction pipe, culverts, or similar structures greater than 3 inches in diameter shall be inspected before being moved, buried or capped.

- **Firearms.** No firearms are permitted on the project site.

- **Survey before Ground Disturbing Activities.** If maintenance or repair activities require ground disturbing activities in areas potentially used by western burrowing owl (grazing land under solar panels, berms along roads, areas containing ground squirrel holes), a pre-construction survey for western burrowing owl shall be conducted by a qualified biologist in the disturbance area. Surveys shall be conducted using the same steps described in Mitigation Measure 3.4-9 (Pre-construction Western Burrowing Owl Measures) of the project MMRP. If burrowing owls are detected during the surveys non-disturbance buffers shall be established as described in the MMRP and a Region 2 CDFW representative) shall be contacted to discuss whether additional avoidance and minimization measures are warranted.

- **Reporting of Bird Mortality.** If operations and maintenance staff detect a bird carcass on the project site that may be a burrowing owl, Swainson's hawk, tricolored blackbird or other special status species, they shall notify SMUD who shall arrange to identify the bird. If the bird is a special-status species, SMUD shall notify a Region 2 CDFW representative immediately, record the date and the location of the carcass, collect the carcass and store it in a freezer. CDFW shall provide guidance on the disposition of the carcass.

- **Injured bird.** If an injured bird is detected by the operation and maintenance staff the site operator, they shall notify SMUD who shall arrange to identify the bird and advise on how to proceed. If the injured bird is a special status bird, SMUD shall contact a Region 2 CDFW representative.

  With concurrence of CDFW, and if the bird is sufficiently immobile that it can be safely and readily retrieved, the bird shall be captured by a qualified biologist experienced with handling raptors and placed into an animal crate/box and stored in a cool location while being transported. The biologist shall transport the injured bird to the appropriate wildlife care facility such as the U.C. Davis California Raptor Center, 1340 Equine Lane, Davis: (530) 752-6091 California Raptor Center / School of Veterinary Medicine - Found a Sick or Injured Raptor?.

Significance After Mitigation

Implementing Mitigation Measures 3.4-1 (WEAP Training), 3.4.9 (Compensation for Permanent Loss of Western Burrowing Owl Habitat) 3.4-10 (Pre-construction Western Burrowing Owl Measures), and 3.4-11 (WEAP Training – Operations) would reduce potentially significant impacts on burrowing owls because these measures would require compensation for permanent loss of habitat, that active burrows in or near the project site be identified and avoided or monitored so that project construction or operation would not result in nest abandonment and loss of eggs or young, or displacement and mortality of wintering. Implementation of Mitigation Measures 3.4-1 (WEAP Training), 3.4.9 (Compensation for Permanent Loss of Western Burrowing Owl Habitat), 3.4-10 (Pre-construction Western Burrowing Owl Measures), and 3.4-11 (WEAP Training – Operations) would reduce this impact to **less than significant**.

Impact 3.4-8. Potential impacts on tricolored blackbirds during construction and permanent conversion of foraging habitat.

Tricolored blackbirds could nest within blackberry thickets, cattails, and bulrushes along the canal and the riparian area surrounding emergent wetlands and could forage within the agricultural fields and annual grassland in the project site. Hundreds of tricolored blackbirds were observed flying over the project area in January 2024 during biological resources surveys.

Construction

As discussed above, vegetation that provides nesting habitat includes blackberry thickets, cattails, and bulrushes. Himalayan blackberry thickets along Laguna Creek could also support nesting tricolored blackbirds. Substantial vegetation removal would not be required in this area because the only project component that crosses Laguna Creek is the aboveground collector line, which would include the installation of poles that would be sited to avoid substantial vegetation removal. Some blackberry removal may be required in this area during the pole installation or equipment staging, but this would not represent a substantial amount of habitat removal. Cattail and bulrush marsh associated with seasonal wetlands, emergent wetlands, and agricultural ditches may also support nesting tricolored blackbirds. These aquatic features would be preserved; however, minor amounts of vegetation may need to be removed to support construction. If tricolored blackbirds are actively nesting in these areas, vegetation removal may result in the destruction of active nests and the consequential destruction of eggs or mortality of nestlings.

If vegetation within 500 feet of project activities becomes occupied by nesting tricolored blackbirds prior to construction, then project construction activities could result in the incidental loss of adults, juveniles, nestlings, or fertile eggs. 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. These construction-generated disturbances could also cause tricolored blackbirds to temporarily avoid foraging in the project site. Only minor amounts of suitable nesting substrate (i.e.,

Himalayan blackberry, cattail, bulrush) would be removed. This species exhibits low site fidelity, and colonies are known to change their nesting location from year to year (Beedy et al. 2020); however, breeding colonies may show site fidelity if essential resources (nesting substrate, access to water, foraging habitat) continue to persist (Hamilton 1998). The loss of minor amounts of potential nesting habitat is not likely to adversely affect local tricolored blackbird populations.

Irrigated pasture and cropland throughout the project site provide suitable foraging habitat for this species. Conversion of 322 acres irrigated pasture and cropland to solar fields (disturbed habitat) is not likely to result in a substantial loss of foraging habitat for tricolored blackbird, and the area underneath the solar panels would be available to foraging tricolored blackbirds following construction. Because there are large, expansive areas of foraging habitat to the north and west of the project site, foraging habitat in the project vicinity is not expected to be a limiting resource for the local population of tricolored blackbirds and temporary or permanent loss of foraging habitat from the project site would not displace individuals or result in reduced reproductive success of potential nesting colonies near the project site.

Abandonment of an active tricolored blackbird colony and loss of numerous nests containing eggs or young could result in a substantial decline in the local nesting population of tricolored blackbirds and contribute to the statewide decline of this species. This impact would be **potentially significant**.

Operation

Project implementation would not result in the loss of any suitable nesting habitat.

Foraging habitat for tricolored blackbirds is available in the project site's irrigated pasture and agricultural land and would be available in the irrigated pasture underneath the solar panels. Because there are large, expansive areas of foraging habitat to the north and west of the project site, foraging habitat in the project vicinity is not expected to be a limiting resource for the local population of tricolored blackbirds. Therefore, impacts on tricolored blackbird nesting and foraging habitat during operations would be **less than significant.**

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Mitigation Measure 3.4-12. Conduct Focused Pre-Construction Surveys for Nesting Tricolored Blackbird and Avoid Impacts During Construction

Construction shall occur outside of the breeding period for tricolored blackbirds (March 15 to August 1). If construction must occur within the breeding period, the following measures shall be implemented to avoid impacts to tricolored blackbirds:

- **Pre-construction Tricolored Blackbird Surveys**. Before any ground-disturbing activities or vegetation clearing that may result in effects on potential habitat for tricolored Blackbird, a qualified biologist shall conduct a pre-construction survey in potentially suitable nesting habitat (i.e., blackberry thickets and cattail marsh) for this species in the project footprint and a 500-foot buffer to the project footprint. The biologist shall conduct three separate surveys, one each in mid-April, mid-May, and mid-June (Beedy, pers. comm., 2022a), and shall use methods consistent with survey protocol used by surveyors for the Western Riverside County MSHCP 2018 https://www.wrc-rca.org/species/survey_protocols/2018_Tricolored_Blackbird_Survey_Protocol.pdf). If an active nesting colony is detected during the surveys CDFW shall be consulted to provide any guidance on appropriate avoidance and minimization measures in addition to those described below.

- **Avoidance and Minimization**. Project activities shall avoid occupied Tricolored Blackbird nesting habitat. If tricolored blackbird colonies are identified during the breeding season, an approximate buffer of up to 500 feet shall be established around the colony, depending on site-specific conditions and at the discretion of a qualified biologist in consultation with CDFW. Any construction-related activities shall be excluded from the buffer until the end of the breeding season.

- **Construction Monitoring**. If construction takes place during the breeding season when an active colony is present within 500 feet of construction activities, a qualified biologist shall regularly monitor construction to ensure that the buffer zone is enforced and to verify that construction is not disrupting the colony. The intensity and frequency of the monitoring shall be established in consultation with CDFW. If monitoring indicates that construction outside of the buffer is affecting a breeding colony, the buffer shall be increased, as needed, in consultation with CDFW.

Information about avoidance and minimization measures for tricolored blackbird shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Significance After Mitigation

Implementing Mitigation Measures 3.4-1 (WEAP Training) and 3.4-12 (Tricolored Blackbird Protection) would reduce potentially significant impacts on tricolored blackbird because these measures would require that active nests and nesting colonies in the project vicinity be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young. Implementation of Mitigation Measures 3.4-1 (WEAP Training) and 3.4-12 (Tricolored Blackbird Protection) would reduce this impact to **less than significant**.

Impact 3.4-9. Potential impact on Swainson's hawk during construction and permanent conversion of foraging habitat.

Swainson's hawks could nest within the large trees surrounding Laguna Creek and along the overhead collector and distribution lines and could forage within the agricultural lands and annual grassland within the project site. Swainson's hawk are known to nest along Laguna Creek within 5 miles of the project site. The most recent record of nesting Swainson's hawks in the area are approximately 0.7 miles west of the project site and are from 2009. There are no other recent records of nesting Swainson's hawk close to the project site.

Construction

Construction activities, including grading and grubbing near, suitable nesting habitat (individual trees or riparian woodland habitats) within the project site or within 0.5 miles of the project site could disturb an active Swainson's hawk nest. Tree removal is not anticipated as part of this project; therefore, there is no risk of removing an active nest during project construction. However, construction-generated disturbances have the potential to indirectly affect Swainson's hawks if the species is nesting near project activities. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles.

Swainson's hawks could forage in the 63.85 acres of grassland and 322 acres of irrigated pasture and agricultural lands within the project site. Construction within the grasslands and agricultural lands would likely deter Swainson's hawks from using this habitat for foraging during construction, due to the increase in human activity, and visual and auditory disturbances. Additionally, during construction, the irrigated pasture and agricultural land would be converted to solar fields and result in a decrease of foraging habitat compared to current conditions. Although there is large amount of available foraging habitat for Swainson's hawks in the project vicinity (generally within 10 miles of the project site), 322 acres of foraging habitat conversion would result in a decrease in the available foraging habitat for locally nesting Swainson's hawks, which could result in displacement of nesting pairs, reduction in reproductive potential, or decreased survival rates, particularly for hawks nesting within one mile of the project site, but also for hawks nesting within 10 miles.

However, recent studies indicate that Swainson's hawks (and other raptors) continue to use solar fields for foraging (Estep 2013, Estep 2021, Estep pers. comm). The studies were of moderate-sized solar projects in south Sacramento County which were converted from cultivated uses. Like the proposed project, the studied solar projects maintained grassland substrates and grazing was used to promote rodent populations and maintain the substrate at a height that promotes visibility and access to prey. The studies concluded use of the solar project by Swainson's hawk appears to depend on the overall availability of foraging habitat in the surrounding land use, the matrix of land uses in the area, the spacing between panels, the vegetation underneath the panels and its ability to

produce suitable prey such as insects or rodents, and availability of suitable perches to allow access to prey underneath the panels. The studies also concluded the presence of managed solar array fields (i.e., managed grassland substrate) did not appear to negatively affect the Swainson's hawk. The solar array fields were used for foraging similarly to other moderate to high value agricultural cover types and their presence did not appear to affect the overall use of the landscape by Swainson's hawks (Estep 2013, Estep 2021, Estep pers. comm).

Loss of active Swainson's hawk nests or displacement of individuals or loss of reproductive success for the local population as a result of loss of suitable foraging habitat would be a **potentially significant** impact.

Operation

Operations and maintenance activities would be intermittent and would not be expected to disturb nearby nesting Swainson's hawks. As discussed above and documented in recent studies, the grasslands in the project site and the area underneath and between the solar panels would remain available for Swainson's hawk foraging. Thus, impacts related to operation of the solar project on Swainson's hawk would be **less than significant**.

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Mitigation Measure 3.4-13. Conduct Focused Pre-construction Surveys for Nesting Swainson's hawks and Implement Protective Buffers

- **Pre-construction Surveys**. A qualified biologist shall conduct pre-construction surveys for Swainson's hawks during the nesting season (March 1 through August 21) within the project footprint and of all suitable nesting habitat within line of sight of construction activities within a 0.25-mile radius of the project footprint. The surveys shall be conducted no more than 15 days prior to ground disturbance and shall be conducted using methods consistent with guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (SHTAC 2000) with the following exceptions:

    - Surveys shall be required within a 0.25-mile (1,320-foot) radius around the project site. In instances where an adjacent parcel is not accessible to survey because the qualified biologist was not granted permission to enter, the qualified biologist shall scan all potential nest tree(s) from the adjacent property, roadsides, or other safe, publicly accessible viewpoints, without trespassing, using binoculars and/or a spotting scope to look for Swainson's hawk nesting activity;

- Surveys shall be required from February 1 to September 15 (or sooner if it is found that birds are nesting earlier in the year); and

- If a Swainson's hawk nest is located and presence confirmed, only one follow-up visit is required (to avoid disturbance of the nest due to repeated visits).

- **Nest Buffers.** If active Swainson's hawk nests are found, appropriate buffers shall be established around active nest sites, in coordination with CDFW, to provide adequate protection for nesting raptors and their young. No project activity shall commence during the nesting season within the buffer areas until the qualified biologist has determined that the young have fledged, the nest is no longer active, or if reducing the buffer would not result in nest abandonment.

- **Nest Monitoring.** Monitoring of the nest by a qualified biologist during construction activities may be required if the qualified biologist determines that the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the qualified biologist has confirmed that the chicks have fledged.

- Information about avoidance and minimization measures for Swainson's hawk shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Mitigation Measure 3.4-14. Compensate for the Loss of Swainson's Hawk Foraging Habitat

To offset net impacts on foraging habitat for breeding Swainson's hawks SMUD shall mitigate the loss of Swainson's hawk foraging habitat in accordance with CDFW recommendations (CDFG 1994) but adjusted to local conditions and based on recent studies by providing mitigation lands or securing Swainson's hawk mitigation bank credits as follows:

- Foraging habitat permanently lost within 5 miles of an active Swainson's hawk nest tree but more than one mile from the nest tree shall be replaced with 0.75 acres of mitigation land for each acre of foraging habitat permanently lost because of project construction (0.75:1 ratio). Permanent loss resulting from the project includes the approximately 4.1-acre footprint of the BESS, substation, and roads

- Foraging habitat permanently lost for nests that are within one mile of the project site shall be mitigated at a 1:1 ratio. Permanent loss resulting from

the project includes the approximately 4.1-acre footprint of the BESS, substation, and roads. The nearest location relative to this area shall be confirmed prior to initiation of construction during preconstruction surveys as called for in Mitigation Measure 3.4.13.

- For foraging habitat under solar panel these mitigation ratios shall be reduced to 0.25:1 for foraging habitat for active nests within 5 miles of the project and 0.5:1 for active nests within 1 mile of the project site. These reduced ratios are appropriate because Swainson's hawks foraging habitat will continue to be available in the solar fields. Foraging habitat will be maintained under the solar panels with pollinator-friendly vegetation that would support Swainson's hawk prey such as insects and small mammals. Ample foraging habitat will also remain in adjacent agricultural lands and open space preserves that are permanently protected.

All mitigation lands protected under this mitigation measure shall be protected in a form acceptable to CDFW (e.g., through fee title acquisition or conservation easement) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawk.

Significance After Mitigation

Implementing Mitigation Measures 3.4-1 (WEAP Training), 3.4-13 (Pre-construction Swainson's Hawk Measures), and 3.4-14 (Swainson's Hawk Compensatory Mitigation) would reduce significant impacts on Swainson's hawk because these measures would require that active nests in or near the project site be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young, or displacement or loss of reproductive success of local nesting pairs, and would require compensation for loss of foraging habitat for active nests within 5 miles of the project site. Implementation of Mitigation Measures 3.4-1 (WEAP Training), 3.4-13 (Pre-construction Swainson's Hawk Measures), and 3.4-14 (Swainson's Hawk Compensatory Mitigation) would reduce impacts to Swainson's hawks to a **less-than-significant** level.

Impact 3.4-10. Potential impacts on greater sandhill crane and permanent conversion of foraging habitat.

Greater sandhill cranes could forage within agricultural land, cropland, and the seasonal wetland within and near the project site during the winter. Approximately twenty greater sandhill cranes were observed within the project site during field surveys conducted in January 2024. Greater sandhill cranes are water-dependent birds and typically breed in open freshwater wetlands and shallow marshes. Greater sandhill cranes wintering in and adjacent to the project site use open agricultural habitats, natural vegetation communities, and seasonally managed wetlands (County of Sacramento et al. 2018).

Construction

No breeding habitat is available within the project site and there is no potential for greater sandhill cranes to breed within the project site. Project-related construction would have no impact on nesting greater sandhill cranes.

Wintering greater sandhill cranes are known to forage within the irrigated pasture and croplands in the project site. Construction of the proposed project would remove 322 acres of foraging habitat for greater sandhill crane. However, large expanses of high value foraging and roosting habitat is available approximately 10 miles south of the project site within the Cosumnes floodplain. Removal of 322 acres of foraging habitat is not expected to have substantial impacts to migrating wintering populations of greater sandhill crane. Construction-related impacts on Sandhill Cranes would be less than significant.

Operation

Studies have shown that some solar facilities, especially PV projects, may attract birds which can result in birds flying into solar panels, resulting in injury or mortality. Kagen et al. (2014) hypothesized that water-dependent species (loons, grebes, rails, coots, shorebirds, waterbirds, and waterfowl) may be vulnerable to collisions at PV facilities because of the potential for them to confuse solar arrays for bodies of water (the lake effect hypothesis). However further studies have not detected a consistent pattern of fatality by taxonomic groups among the solar energy facilities, most of which were in desert regions, which would support or refute this hypothesis (Walston et al. 2015). Due to the limited and inconsistent dataset (i.e., six studies of incidental and systematic observations), Walston et al (2015) concluded that it was too speculative to make any conclusions about the influence of the lake effect fatality on water-dependent birds.

Kosciuch et al. (2020) summarized 13 years of bird mortality data from utility scale PV solar facilities in the Southwestern U.S. in California and Nevada; to date no studies have been conducted in California's Central Valley or Sierra Nevada foothills. The authors provided some overarching conclusions based on their analysis:

- Approximately 75 percent of fatalities detected were ground-dwelling birds such as resident meadowlarks and horned larks;
- the most widely occurring bird fatalities had populations in the millions in the region where studies were conducted;
- there was no evidence of large-scale fatality events of nocturnal migrating passerines or water dependent species, and
- most of the detections of avian fatalities were feather spots with the cause of death unknown.

Based on these studies, it is considered unlikely that the project would result in substantial fatalities of waterfowl or other water dependent birds, such as greater sandhill crane, due

to collisions with solar panels and the presence of solar panels. Therefore, this impact is **less than significant**.

Impact 3.4-11. Disturbance of nesting white-tailed kite, northern harrier, Cooper's hawk, loggerhead shrike, song sparrow "Modesto" population, and other protected birds.

Annual grassland throughout the project site represents suitable nesting and foraging habitat for white-tailed kite, northern harrier, Cooper's hawk, loggerhead shrike, song sparrow ("Modesto" population), and other protected birds protected by the MBTA. Northern harrier and song sparrow are ground nesting species that have potential to nest anywhere within the onsite annual grassland habitat. White-tailed kites and Cooper's hawks have the potential to nest within large trees along Laguna Creek or throughout the collection line alignment. Loggerhead shrikes have potential to nest in riparian shrub habitat along Laguna Creek.

Construction

Project construction activities during the bird and raptor breeding season (generally February 1 through August 31) could disturb or remove occupied nests of special-status and non-special-status birds and raptors. Removal of suitable nesting habitat associated with vegetation removal, including mowing, could result in the incidental loss of fertile eggs or nestlings, or lead to nest abandonment. Increased levels of noise and human activity in the vicinity of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. Disturbance of potential nesting habitat for special-status and non-special-status birds and raptors has the potential to affect occupied nests of various species and would be **potentially significant**.

Operation

Overhead power lines are a well-documented collision and electrocution risk for larger species such as raptors, and the risk may be greater if overhead lines are near flight corridors for susceptible species. The overhead lines (including the overhead distribution lines and 0.5-mile-long overhead collector line that would connect the northern and southern areas of the project site) would be designed to reduce raptor and other bird collisions and electrocutions in compliance with SMUD's current APP standards (SMUD 2016). Avian protection design standards and mortality reduction measures in the SMUD APP include installing flight diverters to increase overhead wire visibility in high-risk collision areas and using 60-inch clearance (minimum vertical separation of 36 inches from phase to ground on single-phase structures or 43 inches between energized conductors and ground on three-phase structures) pole design in eagle/raptor use areas. In addition, the APP requires that avian injuries and mortalities be reported to the SMUD APP Coordinator and that corrective actions be implemented if high mortality rates or avian caused power outages are recorded. Observations of injured or deceased birds during routine inspections are reported to SMUD's APP Coordinator.

With implementation of SMUDs avian protection design standards the risk of raptor collision or electrocution is minimal, and the project would not affect raptor or other bird migration corridors. Therefore, this potential impact is **less than significant**.

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Mitigation Measure 3.4-15. Conduct Pre-Construction Surveys for Nesting Birds and Raptors

Tree trimming (if required) or vegetation removal shall be conducted outside of the nesting season (i.e., the nesting season is defined as February 1 through August 31) to the greatest extent feasible.

If construction activities begin during the nesting season, a qualified biologist shall conduct a survey for nesting birds no more than 3 days prior to vegetation removal or ground-disturbing activities during the nesting season within suitable habitat (i.e., February 1 through August 31). The survey shall cover the limits of construction and accessible suitable nesting habitat within 500 feet. If any active nests are observed during surveys, a qualified biologist should establish a suitable avoidance buffer from the active nest. The buffer distance shall typically range from 50 feet (for nesting passerines) to 500 feet (for nesting raptors) and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule.

If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days are allowed to pass between the survey and vegetation removal activities.

Mitigation Measure 3.4-16. Avoid Impacts on Nesting Birds and Raptors during Construction

Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.

If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be halted 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 nest has fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.

Information about avoidance measures to protect nesting birds and raptors shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Significance After Mitigation

Implementing of Mitigation Measures 3.4-1 (WEAP Training), 3.4-15 (Pre-construction Bird Surveys), and 3.4-16 (Nesting Bird and Raptor Protection) would reduce potentially significant impacts on special-status and other nesting birds because these measures would require that active nests in the project vicinity be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young. Implementation of Mitigation Measures 3.4-1 (WEAP Training), 3.4-15 (Pre-construction Bird Surveys), and 3.4-16 (Nesting Bird and Raptor Protection) would reduce this impact to a **less-than-significant** level.

Impact 3.4-12. Potential impacts to western red bat.

Western red bat could roost within the riparian corridor along Laguna Creek and could forage within the grassland and agricultural lands within the project site.

Construction

Construction along the Laguna Creek riparian corridor would not require the removal of any trees. Bat species could be at risk of significant impacts if construction were to cause the removal or abandonment of an important roost, especially a maternity roost. If an occupied roost were to be removed or a roost was abandoned with pups in residence, substantial direct mortality could occur. However, construction along the overhead collector line alignment would involve the installation of new poles and hanging new cabling. This work would be temporary and would not require removal of any potential roosting habitat. Therefore, potential construction related impacts on roosting bats would be **less than significant**.

Operation

Irrigated pasture and cropland throughout the project site provides suitable foraging habitat for this species. Converting 322 acres of irrigated pasture and croplands to solar fields (disturbed habitat) is not likely to result in a substantial loss of foraging habitat for western red bat. Because there are large, expansive areas of foraging habitat to the north and west of the project site, foraging habitat in the project vicinity is not expected to be a limiting resource for the local population of western red bats and loss of foraging habitat from the project site would not displace individuals or result in reduced reproductive success of potential nesting colonies near the project site. Therefore, this potential impact is **less than significant**.

Impact 3.4-13. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies,

regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Sensitive natural communities, including riparian habitat, fall under the jurisdiction of CDFW under Fish & Game Code. These communities are habitats that have a limited distribution and are often vulnerable to the environmental effects of projects. In addition, riparian habitat is subject to protections under Sacramento County code. These communities may support special-status species or their habitats. Sensitive natural communities identified within the project area, along the transmission road alignment, include valley oak riparian forest and woodland (S3/G3), seasonal wetlands of the Juncus-Carex Herbaceous Alliance (a S3/G4 community), and vernal pools which also occur at the north end of the southern area of the project site.

Valley oak riparian forest woodland is only present along the overhead collector line connecting the northern and southern areas of the project site. Construction activities associated with the proposed distribution and overhead collector lines would involve installation of new wood or metal poles and installing new conductors along the poles. Some trees may need to be trimmed during the installation of the new overhead collector line; however, no trees are expected to be removed as part of this project. No valley oak forest and woodland would be removed during construction.

Seasonal wetlands onsite were avoided during design, including a 25-foot buffer. Seasonal wetlands also occur along the distribution lines. A 25-foot setback would also be established around any seasonal wetlands that occur in the distribution line corridor to protect these wetlands and the species dependent on them from adverse effects during construction. The buffers would be demarcated in the field during construction, but the demarcation would be removed following pole construction. These buffers would avoid project-related impacts to seasonal wetlands.

Construction of the PV solar panels, BESS, and substation within the northern area and the southern area would be set back from all vernal pools by 250 feet. This setback distance is designed to avoid construction-related impacts to vernal pools. Therefore, impacts to vernal pools and the plant and animal species that may inhabit these vernal pools, are not expected to occur.

The Project contains 0.75 acres of vernal pool habitat within 25 feet of the proposed distribution line alignment. Construction activities associated with the proposed distribution and overhead collector lines would involve installation of new wood or metal poles, installing new conductors along the poles, and reconductoring existing lines. Installation of the new and reconductoring of the existing collection and distribution systems would occur outside of the boundaries of all identified vernal pools. Therefore, direct impacts to vernal pools are not anticipated. However, construction could result in indirect impacts to vernal pools, through the alteration of hydrology or from construction runoff. These potential indirect impacts to vernal pools would be a **potentially significant** impact.

Mitigation Measures

Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines

Significance After Mitigation

Implementing Mitigation Measure 3.4-3 (Vernal Pool Buffers) would avoid impacts to vernal pools and the plant species that inhabit them, by requiring the placement of new wooden or metal poles to be at least 50 feet away from mapped vernal pools. Implementation of Mitigation Measure 3.4-3 (Vernal Pool Buffers) would reduce this impact to **less than significant**.

Impact 3.4-14. 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?

The project site contains 0.57 acres of CWA Section 404 potentially jurisdictional features (wetlands [0.29 acres] and other waters [0.28 acres]), and 8.03 acres of Porter-Cologne potentially jurisdictional features (wetlands [7.645 acres] and other waters [0.39 acre]). These numbers are based on the *Aquatic Resources Delineation Report* (Appendix BR-1) which has not been verified by the USACE. Thus, the exact acreage of jurisdictional habitats in the project area may change slightly depending on that verification.

The 30 percent concept design was developed to specifically avoid impacts on vernal pools and seasonal wetlands and also includes 250-foot buffers around vernal pools and 25-foot buffers around seasonal wetlands that would avoid indirect impacts. A 100 foot buffer was applied to the main drainage canal onsite to avoid impacts. Based on the 30 percent design and the *Aquatic Resources Delineation Report*, the proposed project would have no impacts on CWA 404 related wetlands or other WUS. The project would result in minor impacts to 0.03 acres of and agricultural ditch in the southwest corner of the southern area of the project site, where road improvements are anticipated. This ditch qualifies as a potential WOS. This would be a **potentially significant** impact.

Mitigation Measures

Implement Mitigation Measure 3.4-1. Worker Environmental Awareness Program (WEAP) and Biological Monitor Inspection

Implement Mitigation Measure 3.4-3. Establish Non-Disturbance Buffers around Vernal Pools along the Collection and Distribution Lines

Mitigation Measure 3.4-17. Avoid, Minimize and Compensate for Impacts on state and federally protected wetlands and other waters.

Prior to project implementation, SMUD shall confirm project related potential impacts on state and federally protected wetlands based on advanced designs and

obtain the necessary permits for impacts on any wetlands. These may include the following permits:

- Section 1600 Streambed Alteration Agreement from CDFW (for impact on streams in the project site, including horizontal directional drilling, if necessary).
- CWA Section 404 permit from USACE for impacts to WUS (not expected to be necessary based on 30 percent design).
- CWA Section 401 Clean Water Certification from the Regional Water Quality Control Board for impacts to WUS (not expected to be necessary based on 30 percent design).
- Waste Discharge Permit from RWQCB for impacts to WOS (anticipated, based on project impacts to a small amount of agricultural ditch qualifying as WOS based on current delineation.
- As part of any permit applications, SMUD shall identify a habitat mitigation plan that shall include mitigation for impacted wetlands and waters on a no-net-loss basis. The plan may include onsite restoration, if feasible, offsite preservation, or purchasing mitigation credits from an agency-approved wetlands mitigation bank, paying an agency-approved in-lieu fee, and/or developing conservation lands to compensate for permanent loss of resources. Mitigation ratios shall be no less than 1:1 and shall be determined during the permitting process based on advanced project design.
- SMUD shall implement all conditions of the permits, including any performance monitoring, if required, for onsite restoration and report on the results of the monitoring to the appropriate agencies at the frequency and duration included in the permits.

Wetlands and other waters protection shall be included in the WEAP described above in Mitigation Measure 3.4-1.

Significance After Mitigation

Implementation of Mitigation Measures 3.4-1 (WEAP Training), 3.4-3 (Vernal Pool Buffers) and 3.4-17 (Protected Wetlands and Other Waters Measures) would avoid impacts on federally and state protected wetland and other waters to **less-than-significant**.

Impact 3.4-15. Interference with wildlife movement, migratory routes, or native nursery sites

The project site falls within the Pacific Flyway, a major migratory route stretching 4,000 miles north-to-south and 1,000 miles east-to-west, from the Arctic to the west coast of Mexico and the Rocky Mountains to the Pacific Ocean. Seasonal wetlands provide important foraging and stopover sites for large numbers of resident and migratory waterfowl and shorebirds (PCCP 2020; Shaffer 2001). While there are seasonal wetlands within the project site, the project site does not contain expansive wetland areas that would support large populations of migratory birds. A pond occurs on the southern area project of the project site and may provide a resting area for migratory waterfowl. The pond would not be modified as part of the proposed project, thus there would be no impact to movement of migratory birds through the site.

Solar panels and associated infrastructure can pose a risk of collisions and electrocutions for migratory and resident birds. Facilities in major migration flyways could potentially have a greater impact on avian populations due to the larger number of birds typically associated with these areas.

As discussed above in the impact discussion for Impact 3.4-10, studies have shown that some solar facilities, especially PV projects, may attract birds which can result in birds flying into solar panels, resulting in injury or mortality. Based on studies conducted on this topic and the fact that the wetlands and pond would not be modified and would continue to exist at the site during project implementation, it is considered unlikely that the project would result in substantial fatalities of waterfowl or other water dependent birds due to collisions with solar panels and the presence of solar panels would not interfere substantially with the movement of waterfowl and other migratory birds. Therefore, this impact is **less than significant**.

As discussed above in Section 3.4.3 under “Methods and Assumptions,” the project’s overhead lines would be designed to reduce raptor and other bird collisions and electrocutions in compliance with SMUD’s current APP standards. With implementation of SMUD’s avian protection design standards the risk of raptor collision or electrocution is minimal, and the project would not affect raptor or other bird migration corridors. Therefore, this potential impact is **less than significant**.

The proposed project would not create a barrier to movement of migratory birds that use the Pacific Flyway because emergent wetlands and open land is available in the project vicinity and many thousands of acres of habitat for migrating birds would still be available after the project is constructed. The project site does not currently provide an important connection between any areas of natural habitat that would otherwise be isolated and is not located within any of the ecological corridors identified in the SSHCP as important to maintaining connectivity between communities, habitat patches, or species populations (County of Sacramento et al. 2018). Therefore, this impact is **less than significant**.

Impact 3.4-16. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Protected trees are defined under Article 19.04 of Sacramento County code as any living native oak tree having at least one trunk of six inches or more in diameter measured four and one-half feet above the ground, or a multi-trunked native oak tree having an aggregate diameter of ten inches or more, measured four and one-half feet above the ground (dbh). While most of the project site is open and treeless, there are some protected native oak trees in the riparian land cover type along Laguna Creek and within developed land cover. While limited tree trimming may occur as part of the proposed project, none of the native oak trees are expected to be removed as part of the project. Furthermore, SMUD is not subject to the County's oak preservation ordinance. This impact would be **less than significant.**

Impact 3.4-17. Conflict with provisions of the South Sacramento Habitat Conservation Plan

Sacramento County and partnering jurisdictions and agencies (i.e., City of Rancho Cordova, City of Galt, Sacramento County Water Agency, Sacramento Regional County Sanitation District, and the Capital Southeast Connector Joint Powers Authority) adopted the SSHCP in February 2018. The project site is within the SSHCP plan area. However, SMUD is not a participating entity of the SSHCP and has determined, in coordination with Sacramento County, that they would not seek coverage under the SSHCP by becoming a special participating entity.

The SSHCP identifies eight Preserve Planning Units (PPUs). The project site is within PPU 3, which is located in the southeastern portion of the SSHCP plan area and was acquired to maintain landscape functions of the remaining vernal pool ecosystem, capture known occurrences of rare plants such as Sacramento Orcutt grass and slender Orcutt grass, and maintain north-south wildlife movement between Jackson Highway, Laguna Creek, and Calvine Road. The project site is not within the proposed core or hardline preserves identified in the SSHCP.

The project has been designed to avoid sensitive biological resources, including those protected under the SSHCP and, where applicable, survey methodology, mapping, and mitigation measures used in the EIR have been developed to be consistent with the SSHCP. The proposed project will require the acquisition of mitigation credits to offset impacts to species that are covered by the SSHCP; although, development of the proposed project would not impact successful implementation of the SSHCP, nor would it compete with the purchase of conservation lands or encroach onto the preserve identified in the SSHCP. Mitigation measures identified in this EIR are compatible with, and complementary to, the SSHCP. Because the project has been developed to be complementary to the goals and methods of the SSHCP, **no impact** related to potential conflicts with provisions of an adopted HCP would occur.

3.5 Cultural Resources

This section describes the environmental and regulatory setting for cultural resources in the project area, identifies and analyzes impacts related to known and unknown cultural resources from implementation of the proposed project, and, if necessary, recommends mitigation measures to reduce or eliminate potentially significant impacts. Tribal cultural resources (TCRs) are separate and distinct from cultural resources, and are discussed in Section 3.18, “Tribal Cultural Resources.”

Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They also include pre-contact and historic-period resources. Archaeological resources are locations where human activity has measurably altered the earth or left deposits of pre-contact or historic-period physical remains (e.g., stone tools, bottles, former roads, house foundations). Historical (or built environment) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts), or landscapes. A cultural landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

3.5.1 Regulatory Setting

Federal

National Register of Historic Places

The National Register of Historic Places (NRHP) is the nation’s master inventory of known historic properties. “Historic properties” may include pre-contact or historic districts, sites, buildings, structures, objects, sacred sites, and traditional cultural places, that are included in, or eligible for inclusion in, the NRHP. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);

2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and

3. It possesses at least one of the following characteristics:

Criterion A Is associated with events that have made a significant contribution to the broad patterns of history (events).

Criterion B Is associated with the lives of persons significant in the past (persons).

Criterion C Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

Criterion D Has yielded, or may be likely to yield, information important in prehistory or history (information potential).

A project is considered to have a significant impact when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. These seven aspects of integrity are described as:

- **Location.** Integrity of location refers to whether a property remains where it was originally constructed or was relocated.
- **Design.** Integrity of design refers to whether a property has maintained its original configuration of elements and style that characterize its plan, massing, and structure. Changes made after original construction can acquire significance in their own right.
- **Setting.** Integrity of setting refers to the physical environment surrounding a property that informs the characterization of the place.
- **Materials.** Integrity of materials refers to the physical components of a property, their arrangement or pattern, and their authentic expression of a particular time period.
- **Workmanship.** Integrity of workmanship refers to whether the physical elements of a structure express the original craftsmanship, technology and aesthetic principles of a particular people, place, or culture at a particular time period.
- **Feeling.** Integrity of feeling refers to the property's ability to convey the historical sense of a particular time period.
- **Association.** Integrity of association refers to the property's significance defined by a connection to a particular important event, person, or design.

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee consideration in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin series was developed to assist evaluators in the application of NRHP criteria. For example, National Register Bulletin Number 36 provides guidance in the evaluation of archaeological site significance. If a property cannot be placed within a particular theme or time period, and thereby lacks "focus," it will be unlikely to possess characteristics which would make it eligible for listing in the NRHP. Evaluation standards for linear features (such as roads, trails, fence lines, railroads, ditches, and flumes) are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: (1) size and length, (2) presence of distinctive engineering features and associated properties, (3) structural integrity, and (4) setting. The highest probability for NRHP eligibility exists in the intact, longer segments, where multiple criteria coincide.

State

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are also listed in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a Statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

A historical resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

Criterion 1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

Criterion 2. Is associated with the lives of persons important to local, California, or national history.

Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.

Criterion 4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a historical resource must meet one of the above criteria and retain integrity to be listed in the CRHR. The CRHR uses the same seven aspects of integrity used by the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," and "unique archaeological resources." Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1; State CEQA Guidelines Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (PRC Section 5024.1).

2. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).

4. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that "unique archaeological resource" means 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 one or more 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.

Local

Sacramento County 2030 General Plan

The following summarizes the goals and policies presented in the Sacramento County 2030 General Plan "Conservation Element," Section VIII: Cultural Resources, as amended on September 26, 2017:

- **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 socioeconomical importance.

Section VIII: Cultural Resources describes policies and programs under six objectives:

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.

The following policies are applicable to this project:

- **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-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 Native American Heritage Commission 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 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.

3.5.2 Environmental Setting

This chapter describes the pre-contact, and historic setting of the project area for the undertaking.

Pre-contact Setting

In an attempt to unify the various hypothesized cultural periods in California, Fredrickson (1993) proposed an all-encompassing scheme for cultural development, while acknowledging that these general trends may manifest themselves differently and some variation may exist between sub-regions. These general cultural periods (i.e., Paleo-Indian, Early, Middle and Late Archaic, and Emergent periods) are used in this document in connection with the North-Central Sierra Nevada chronology because of their relevancy to the lower foothill region of the project area.

The Late Pleistocene pattern and period (greater than 10,000 years before present [B.P.]) is practically non-existent in the foothill and eastern Sacramento Valley. Sites CA-SAC-370 and CA-SAC-379, located near Rancho Murieta, produced numerous bifaces, cores, and raw materials from gravel strata estimated to be between 12,000 and 18,000 years in age. Early Holocene pattern and period (circa [ca.] 10,000–7000 B.P.) was first defined by Bedwell (1970) as a human adaptation to lake, marsh, and grassland environments that were prevalent at this time. Appearing after 11,000 years B.P., the tradition slowly disappeared ca. 8000–7000 B.P.

During the Archaic pattern and period (ca. 7000–3200 B.P.), the climate in the valleys and foothills of Central California became warmer and dryer, and millingstones are found in abundance.

The Early and Middle Sierran pattern (ca. 3200–600 B.P.) evidences a possible expansion in the use of obsidian that would indicate an increase in regional land use, and the regular use of certain locales. During this time, a much heavier reliance on acorns as a staple food was developed, supporting large, dense populations.

During the Late Sierran period (ca. 600–150 B.P.), archaeological village sites generally correspond to those identified in the ethnographic literature. Diagnostic items include small contracting-stem points, clam shell disk beads, and trade beads that were introduced near the end of the period, marking the arrival of European groups (Beardsley 1954:77–79; Elsasser 1978:44; Fredrickson 1993).

Historical Context

Developmental History of Sloughhouse and Vicinity, 1839-1851

Jared Dixon Sheldon, born on January 8, 1813 in Underhill Centre, Vermont, became the first Euro-American to settle Sloughhouse in 1841, with his friend and partner, William Daylor, making the Sloughhouse/Cosumnes area one of the oldest Euro-American settlements in the Central Valley of California. Sheldon was born to Truman Sheldon, a veteran of the War of 1812. In 1832, at the age of 19, Sheldon moved to Illinois and supported himself by teaching at local district schools. Around 1834, Sheldon accepted a teaching job in Dayton, Ohio, where he met and married “Miss Edwards.” His wife died about six months later, prompting Sheldon to move to St. Louis, Missouri in 1838, at the age of 26 (*Sacramento Bee* 1940).

In St. Louis, Sheldon signed onto a trading party headed to Santa Fe, New Mexico along the Santa Fe Trail. He arrived in Santa Fe circa 1839 and quickly transferred to an additional hunting and prospecting party headed for Alta California (Jones & Stokes Associates, Inc. 1998). The exact date of Sheldon's arrival in Alta California is often debated among historians. Some historians believe he arrived in modern day Los Angeles in 1839, while others argue he arrived in 1837 (*Sacramento Bee* 1932/1940). During this period, Sheldon constructed the first sawmill on the Pacific slope, at or near modern day Los Angeles. He transported the saw on pack mules from Mexico, wrapped in rawhides. The sawmill was put into complete working order by 1841 (*Sacramento Bee* 1932).

For a short time, Sheldon remained in Southern Alta California and traded horses with Chihuahua, Mexico. However, shortly after his debt annulment, Sheldon traveled to Monterey and, as a carpenter by trade, built the Customs House for the Mexican government. As a form of payment, the Mexican Governor, Manuel Micheltorena, granted him an unspecified piece of land of his choice. To qualify for the grant, Sheldon joined the Catholic Church, assumed a Mexican name, and became a Mexican citizen (*Sacramento Bee* 1987).

While in Monterey, Sheldon met and befriended William Daylor. Daylor arrived in Monterey as a sailor on an English trading vessel docked in the Monterey Bay. Sheldon convinced Daylor to "jump ship" and join his ventures. Sheldon and Daylor traveled to Sacramento in 1841 and worked for Captain John Sutter at Sutter's Fort. That same year, Daylor traveled east from Sutter's Fort with the intention of locating lost horses that belonged to Sutter. In the process, he "discovered" a valley bisected by the Cosumnes River (PAR Environmental Services, Inc. 2011). Daylor, immediately impressed with the valley, returned to Sheldon and shared the news. Sheldon quickly recognized the agricultural potential of the land and elected to use his land grant to apply for ownership of the valley. Sheldon and Daylor settled in the land that same year. However, the Mexican government did not complete the process of the land grant until 1844, when they officially transferred the ownership of the Omochumnes Rancho to Sheldon (*Sacramento Bee* 1932; Jones & Stokes Associates, Inc. 1998). The Omochumnes Rancho, totaling 18,662 acres along Jackson Road, extended from modern Grant Line Road on the west to Latrobe Road on the east, with the Cosumnes River forming the southern border and an arbitrary straight line forming the northern border (Jones & Stokes Associates Inc. 1998).

Between 1841 and 1845, Daylor managed the land while Sheldon continued to work for Sutter to raise money for cattle and agricultural supplies. Daylor constructed an adobe house in 1841, historically located along the Cosumnes River. In 1845, Sheldon permanently settled on the land and built a house along modern-day Jackson Road, roughly located east of the Slough House Inn (Jones & Stokes Associates, Inc. 1998). At this time, Sheldon renamed the land the Sheldon Grant and divided it into three parcels: Upper Daylor's Ranch, Sheldon's Ranch, and Lower Daylor's Ranch (PAR Environmental Services, Inc. 2011).

In 1847, Sheldon married Catherine F. Rhoads, the 15-year-old daughter of Thomas Rhoads who arrived in Alta California in 1846 and settled on Dry Creek. William Daylor married the sister, Sarah Rhoads, that same year, who was 17 years old. The Rhoads sisters traveled west with their Mormon family between 1845 and 1846, traveling with the Donnor Party for a short period of time. They avoided the tragedy that befell the Donnor Party by electing not to pursue the "Hasting's Cut-off." Thomas Rhoads participated in the Donnor rescue party in 1846. The two families became the first American settlers of the Cosumnes River (*Sacramento Bee* 1932; Elk Grove Historical Society, n.d.).

During the early years of the Gold Rush, Sheldon and Daylor prospered by selling cattle and supplies to miners who passed through towards the Amador Mines. The Gold Rush traffic along Jackson Road, the main route from Sacramento to Jackson, prompted Daylor to open a general store near his home. Sheldon also constructed the Slough House Inn in 1850. The inn became a favorite overnight stopping place for miners and travelers, including Leland Stanford. In 1890, the Slough House Inn burned down but was quickly rebuilt. The existing 1890 structure became the State Historical Landmark No. 575 and commemorates both the 1850 building and 1890 reconstruction (Jones & Stokes Associates Inc. 1998).

In 1851, well into the California Gold Rush, Sheldon constructed a dam on Clarks Bar, along the Cosumnes River, to irrigate his land. However, Sheldon's dam caused potential flooding of gold claims upstream as a result of the rising water. On July 12, 1851, a group of miners destroyed the dam and confronted Sheldon about the control of water. The miners shot and killed Sheldon, along with two of his men, James M. Johnson and Edward Cody (*Sacramento Bee* 1932; Elk Grove Historical Society, n.d.). The death, known as the "Riot on the Cosumnes," became the first recorded incident of miners and farmers fighting for the control of water in California. William Daylor died that same year of cholera.

Developmental History 1860-Present

After the death of Sheldon and Daylor, Sarah and Catherine Rhoads quickly remarried in order to maintain the rights to their late husbands' land. Sarah Rhoads married William Grimshaw in April 1851, a bookkeeper in Daylor's Jackson Road store. Circa 1876, Grimshaw contracted a tropical disease while on a business trip in Mexico. He traveled to China in search of medical treatment but died on September 14, 1881. Before his death, Sarah and Grimshaw had 12 children together. Catherine Rhoads married John Mahone in 1852 and built a house that same year near the Slough House Inn. In 1872, Mahone died and Catherine remarried to an Irish-born immigrant, Dennis Dalton. In 1905, Sarah Rhoads died (Jones & Stokes Associates Inc. 1998; PAR Environmental Services, Inc. 2011).

Prior to the deaths of the Rhoads sisters, and with the end of the Gold Rush, the Sloughhouse area quickly shifted from roadside businesses to an agricultural region. The Rhoads sisters divided and sold Sheldon's original grant into smaller parcels to accommodate their children and the rising demand of the agricultural industry. By 1870, the Upper Daylor Ranch property was divided into a series of long narrow parcels that

stretched from the Cosumnes River over Deer Creek to the grant line (Grant Line Road) located immediately south of the current project. Sarah and William Grimshaw continued to live on a 437-acre parcel with their house north of Deer Creek. However, by 1876, they sold a large parcel of their land to the Belcher Family who settled and established their own agricultural ranch. Between 1882 and 1892, Sarah and William Grimshaw divided more of their land for their children, leaving a sliver of what they previously owned at the time of Sheldon's and Daylor's death (PAR Environmental Services, Inc. 2011).

In response to the division of Sheldon's original land grant, outside families and opportunists arrived in the Sloughhouse area, including the project site, in the late nineteenth and early twentieth centuries to take advantage of its commercial potential. Throughout the late nineteenth and early twentieth century, agriculture in the Sloughhouse vicinity gradually transitioned from cattle and sheep ranching to tree crops and hop farming. The lowlands, or river bottom lands, in the middle of the valley primarily focused on crop farming while the high lands, to the east and west including the project area, focused on livestock grazing.

3.5.3 Literature Review

A cultural records search was conducted by the North Central Information Center (NCIC), of the California Historical Resources Information System, California State University, Sacramento on January 3, 2024 (File No. SAC-24-5). The NCIC, an affiliate of the California Office of Historic Preservation (OHP), is the official state repository of cultural resource records and studies for Sacramento County. Documentation of the cultural resources records search results, which are provided in a separate *Cultural Resources Identification Report* prepared by AECOM in December 2024 as part of this project effort, are included as Appendix CR-1.

The search included the project site and a 0.25-mile radius. The results were used to determine whether known cultural resources have been recorded at or adjacent to the project site, and to assess the cultural sensitivity of the area. The records search included reviews of maps listing previously conducted cultural resource studies in the area. Other resources reviewed included the NRHP, CRHR, the California Inventory of Historic Resources, California Historical Landmarks, California Points of Historical Interest, the Historic Property Data File, and historic General Land Office (GLO) maps.

Site records and previous studies were accessed for the project Area of Potential Effect (APE) and a 0.25-mile radius in the Buffalo Creek, California U.S. Geological Survey (USGS) 7.5-minute quadrangle. The following references were also reviewed:

- National Register of Historic Places
- California Register of Historical Resources
- OHP Historic Property Data File (April 2012)
- OHP Five Views: An Ethnic Historic Site Survey for California (OHP 1988)

- California State Historical Landmarks (OHP 1996)
- California Inventory of Historic Resources (California Department of Parks and Recreation 1976)
- California Points of Historical Interest (OHP 1992)
- GLO Plat Maps

3.5.4 Previous Investigations

The records search indicated that an isolated metal fence post was noted within the project study area and two ranch/farm complexes, and an isolated white earthenware fragment were located within the 0.25-mile search radius outside of the project study area (Table 3.5-1 and Table 3.5-2). Eight previous cultural resource studies of pre-contact and historic cultural resources have been conducted within the APE (Table 3.5-3), in addition to five cultural studies within a 0.25-mile radius of the project area (Table 3.5-4).

Table 3.5-1 Previously Recorded Cultural Resources Within the APE

Primary Number	Resource Name	Resource Type	Historic Property Status
P-34-1111-H	Isolated iron fence post	Historic	Not significant/eligible

Source: Site documentation is on file at the North Central Information Center, data compiled by AECOM 2024
APE = Area of Potential Effect

Table 3.5-2 Previously Recorded Cultural Resources Outside of the APE within 0.25 Mile

Primary Number	Resource Name	Resource Type	Historic Property Status
P-34-1110-H	Cattle Ranch Complex	Historic	Unevaluated
P-341112-H	Isolated white earthen ware	Historic	Not significant/eligible
P-34-5402	Farm complex with five features	Historic	Recommended not significant/ not eligible

Source: Site documentation is on file at the North Central Information Center, data compiled by AECOM 2024
APE = Area of Potential Effect

Table 3.5-3 Previous Cultural Resources Reports in the APE

Report Number	Title	Author/Date
88	Reconnaissance Archeological Survey of the Morrison Stream Group in Sacramento County, California.	Johnson (1974)
6751	Cultural Resources Survey of the Proposed North Vineyard Station Traffic Signal Project, Florin Road/Excelsior Road	Herrmann (2005)
8062	Cultural Resources Survey and Evaluation North Vineyard Station Off-Site Project	Mason (2006)
9989a	Cultural Resources Inventory and Evaluation Report for the Freeport Regional Water Project, Sacramento and San Joaquin Counties, California	Jones and Stokes (2008)
9989b	Revised Addendum Cultural Resources Inventory Report for Modifications to the Freeport Regional Water Project Area of Potential Effects, Sacramento and San Joaquin Counties, California-APE Modification FRWP-2007-06	Jones and Stokes (2008)
9989c	APE Modification FRWP-2008-03, Sediment Disposal Site at 9005 River Road, FRWA Intake Facility and Joint Pipeline, Freeport Regional Water Project	Jones and Stokes (2008)
9989d	Revised APE Modification FRWP-2008-10, Permanent Disposal Area on Segment 2 of the FRWA Pipeline, Freeport Regional Water Project and Warren Sediment Disposal Site, Folsom South Canal Connection Pipeline, Freeport Regional Water Project (05-CCAO-197.10)	Jones and Stokes (2008)
11723	Heritage Resources Inventory Report for the Interim North Service Area Pipeline Project, Sacramento County, California	Heffner (2014)

Source: All reports are on file at the North Central Information Center, data compiled by AECOM 2024
APE = Area of Potential Effect
FRWP = Freeport Regional Water Project

Table 3.5-4 Previous Cultural Resources Reports Outside of the APE within 0.25 Mile

Report Number	Citation	Author/Date
558	Cultural Resource Assessment of the Proposed Klotz Subdivision, Sacramento County, California.	Peak. and Associates (1980)
1857	Archeological Survey and Letter Report for Southeast Florin Multi-Cultural Park	Slaymaker (1988)
5933	Cultural Resource Inventory: Klotz Property	ECORP Consulting (2005)
6154	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project	Brian Hatoff et al. 1995
13213	Cultural Resources Study, Sacramento Aggregates Expansion Site Project, Sacramento County, California	Vallaire et al. (2017)

Source: All reports are on file at the North Central Information Center, data compiled by AECOM 2024
APE = Area of Potential Effect

3.5.5 Field Inventory and Findings

Archaeology Survey

Distribution Lines

On January 10, 2024, AECOM archaeologist Diana Ewing, accompanied by Jonathan Prout, United Auburn Indian Community (UAIC) certified Tribal Monitor, conducted a cultural resource pedestrian survey of the proposed distribution lines. The majority of the route is within the public rights-of-way. With the exception of contemporary refuse, no cultural material was observed.

Project Site

Between March 25 and March 28, 2024, AECOM archaeologists Karen Gardner, Richard Deis, and Zenzi Moore-Dawes accompanied by Jonathan Prout, UAIC certified Tribal Monitor, conducted a cultural resource pedestrian survey of 522 acres located on APNs 123-0030-003 and 123-0040-001. Initial assessment indicated that the entire project site has been subjected to leveling for agriculture and little to none of the original ground surface is present. In addition, the seasonal drainage that originally bisected the site has been relocated and is now located along the western project boundary. Several gravel ranch roads provided access to individual fields. With the exception of one field all were covered with grasses up to one foot in height. Surface visibility ranged from 1 to 5 percent and transects were spaced at 25-meter intervals. The exception was an 85-acre field vegetated with extremely dense grass up to 3 feet in height. Approximately 25 percent of the field was surveyed, however none of the surface was visible. The skeletal remains of sheep were scattered throughout the project site.

An additional survey was conducted on June 10 and 11, 2024, by AECOM archaeologists Zenzi Moore-Dawes and Noah Wallick accompanied by UAIC certified Tribal Monitor Jonathan Prout. This survey consisted of the 85-acre parcel mentioned above which had since been mowed and was now accessible, an 80-acre parcel located south of Florin Road and west of Eagles Nest Road and proposed rights-of-way for the connector and distribution lines extending from the original parcel north to the 80-acre parcel. Newly moved fields characterized the project sites at the time of the June 2024 survey with surface visibility averaging less than 5 percent. Standing water was present within the 80-acre parcel, and that portion of the site was therefore not accessible. No cultural material was observed.

The geoarchaeological assessment, included in Appendix CR-1, indicated that the original landform is characterized by Pleistocene-era deposits such that any archaeological material would be located at or near the surface. Given that extensive levelling to a depth of up to 8 feet has occurred throughout the project site, the potential for subsurface archaeological deposits is extremely low.

Archaeology inventory and findings are provided in a separate *Cultural Resources Identification Report* prepared by AECOM in December 2024, included as Appendix CR-1.

Built Environment Survey

On November 27, 2024, AECOM architectural historian Evan Mackall conducted an architectural survey to identify historic-age built environment resources properties within the project site and APE. These efforts identified one property in the project site that resulted in the preparation of Department of Parks and Recreation (DPR) 523 series forms: the Henri Waegell Ranch, a rural ranch property established in 1920 at 7700 Eagles Nest Road in Sacramento, California, located on project parcel APN 123-0030-003 and an associated parcel at APN 123-00030-002, with a combined acreage of 316.45 acres. The ranch property was evaluated and found not eligible for listing in the NRHR nor the CRHR due to a lack of integrity and is therefore not considered a historic property under Section 106 nor a historical resource for the purposes of CEQA.

The built environment inventory and evaluation are provided in a separate *Built Environment Resources Identification and Evaluation Report* prepared by AECOM in December 2024, included as Appendix CR-2.

3.5.6 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The impact analysis for archaeological and historical resources is based on the records search results (NCIC File Number SAC-24-5) and field investigations. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

As described above in Section 3.5.1, “Regulatory Setting” section, PRC Section 21083.2(g) defines a “unique archaeological resource” as 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 one or more of the following CRHR-related criteria: (1) that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; (2) that it has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) that it is directly associated with a scientifically recognized important prehistoric or historic event or person. An impact on a resource that is not unique is not a significant environmental impact under CEQA (State CEQA Guidelines Section 15064.5[c][4]). If Country Acres Solar Project EIR September 2022 Page 3.5-12 of 3.5-14 an archaeological resource qualifies as a resource under CRHR criteria, then the resource is treated as a unique archaeological resource for the purposes of CEQA.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on cultural resources if it would:

- cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines; or
- disturb any human remains, including those interred outside of dedicated cemeteries.

Issues or Potential Impacts Not Discussed Further

Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5 of the State CEQA Guidelines – As described above in Section 3.5.5, "Field Inventory and Findings", based on the built environment inventory and evaluation completed for the project and described in Appendix CR-2, no historical resources, or historic properties, were identified on the project site. Therefore, project construction and operation would have **no impact** on historical resources. This issue is not analyzed further.

All potential archaeological resources issues identified in the significance criteria are evaluated below.

Impact Analysis

Impact 3.5-1 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

The records search conducted in support of the project revealed very limited resources had previously been documented on the project site, mainly an isolated metal fence post. The pedestrian survey did not identify any cultural resources on the project site. However, project-related ground-disturbing activities could result in discovery of or damage to yet undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. This would be a **potentially significant** impact.

Mitigation Measure

Mitigation Measure 3.5.1: Halt ground-disturbing activity upon discovery of subsurface archaeological features.

In the event that any pre-contact or historic-era subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted and a qualified professional archaeologist

shall be retained to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either an historical resource, a unique archaeological resource, or a tribal cultural resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include, but would not be limited to, preservation in place (which shall be the preferred manner of mitigating impacts to archaeological sites), archival research, subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan).

Significance after Mitigation

Implementation of Mitigation Measure 3.5-1 would reduce impacts associated with archaeological resources to **less than significant** because it would require the performance of professionally accepted and legally compliant procedures for the discovery of previously undocumented significant archaeological resources.

Impact 3.5-2 Disturb any human remains, including those interred outside of dedicated cemeteries?

Project construction would involve grading, trenching, excavation, soil stockpiling, and other earthmoving activities. There has been no indication that the area has been used for human burials in the recent or distant past; therefore, human remains are unlikely to be encountered. However, in the unlikely event that human remains are discovered during subsurface activities, they could be inadvertently damaged. Therefore, this impact would be **potentially significant**.

Mitigation Measure

Mitigation Measure 3.5-2: Halt ground-disturbing activity upon discovery of human remains.

If human remains are discovered during any construction activities, potentially damaging ground-disturbing activities within 100 feet of the remains shall be halted immediately, and SMUD will notify the Sacramento County coroner and the NAHC immediately, according to PRC Section 5097.98 and Section 7050.5 of the California Health and Safety Code. If the remains are determined by the NAHC to be Native American, the guidelines of the NAHC shall be followed during the treatment and disposition of the remains. SMUD shall also retain a professional archaeologist with Native American burial experience to conduct a field investigation of the specific site and consult with the Most Likely Descendant, if any, identified by the NAHC. Following the coroner's and NAHC's findings, the archaeologist and the NAHC-designated Most Likely Descendant shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. PRC Section

5097.94 identifies the responsibilities for acting upon notification of a discovery of Native American human remains.

Significance after Mitigation

Mitigation Measure 3.5-2 requires the performance of professionally accepted and legally compliant procedures in case of the discovery of human remains. Therefore, implementing this mitigation measure would reduce impacts associated with the inadvertent discovery of human remains to **less than significant**.

3.6 Energy

This section provides an overview of the primary energy requirements and generation of the proposed project, as well as an overview of existing regulations that require energy-efficient construction and operation. This section also evaluates the potential for the proposed project to result in wasteful, inefficient, and unnecessary consumption of energy.

3.6.1 Regulatory Setting

Federal and state agencies regulate energy consumption through various policies, standards, and programs. At the federal level, energy standards apply to numerous products (EPA EnergyStar™ program) and transportation (e.g., fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. Further, the State provides rebates/tax credits for installation of renewable energy systems and offers the Flex Your Power program to promote conservation in multiple areas. At the local level, individual cities and counties establish policies in their general plans and climate action plans related to the energy efficiency of new development and the use of renewable energy sources. Energy conservation is embodied in many federal, state, and local statutes and policies. Some of the most relevant aspects of the regulatory framework are summarized in the material that follows.

Federal

National Energy Act of 1978

The National Energy Act of 1978, including the Public Utility Regulatory Policies Act (Public Law 95-617), Energy Tax Act (Public Law 95-318), National Energy Conservation Policy Act (Public Law 95-619), Power Plant and Industrial Fuel Use Act (Public Law 95-620), and the Natural Gas Policy Act (Public Law 95-621), is a broadscale, national energy conservation and renewable energy initiative.

The intent of the National Energy Act was to promote greater use of renewable energy, provide residential consumers with energy conservation audits to encourage slower growth of electricity demand, and promote fuel efficiency. The Public Utility Regulatory Policies Act created a market for nonutility electric power producers to permit independent power producers to connect to their lines and to pay for the electricity that was delivered.

The Energy Tax Act promoted fuel efficiency and renewable energy through taxes and tax credits. The National Energy Conservation Policy Act required utilities to provide residential consumers with energy conservation audits and other services to encourage slower growth of electricity demand.

Energy Policy Act

The Energy Policy Act of 1992 was developed to reduce dependence on imported petroleum and improve air quality by addressing all aspects of energy supply and

demand, including alternative fuels, renewable energy, and energy efficiency. The Energy Policy Act of 1992 requires certain federal, state, and local government and private fleets to purchase alternative fuel vehicles. The act also includes definitions for "alternative fuels," and includes fuels such as ethanol, natural gas, propane, hydrogen, electricity, and biodiesel.

The Energy Policy Act of 2005 set federal energy management requirements for energy-efficient product procurement, energy savings performance contracts, building performance standards, renewable energy requirements, and alternative fuel use. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

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

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The CEC is the state's primary energy policy and planning agency to regulate energy efficiency standards, tasked with reducing energy costs and environmental impacts of energy use, while ensuring a safe, resilient, and reliable supply of energy. The CEC conducts collection and analysis of energy-related data, including production, transportation, delivery, and distribution, in order to provide both historical information and forecast data on energy usage. It also develops energy policy recommendations and plans for the state and is also in charge of energy efficiency programs and the enforcement of appliance and building energy efficiency standards.

Senate Bill 1389 (2002) – Integrated Energy Report

Senate Bill (SB) 1389 (Bowen, Chapter 568, Statutes of 2002) requires the Energy Commission to prepare a biennial integrated energy report. In accordance, the CEC prepares the Integrated Energy Policy Report, which provides a cohesive approach to

identifying and addressing the state's energy requirements and challenges. The report develops and implements energy plans and policies. The report contains an integrated assessment of major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors. The report provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety.

Senate Bill 1078 (2002), Senate Bill 100 (2021) – California Renewable 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. As of December 2021, per SB 100, the RPS requires 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.

California Code of Regulations, Title 20 and Title 24

New buildings constructed in California must comply with the standards contained in CCR Title 20, Appliance Efficiency Regulations, and Title 24, California Building Standards Code.

Title 20 standards range from power plant procedures and siting to energy efficiency standards for appliances, ensuring reliable energy sources are provided and diversified through energy efficiency and renewable energy resources. California's 2009 Appliance Efficiency Regulations (20 CCR 1601–1608) were adopted by the CEC on December 3, 2008, and approved by the California Office of Administrative Law on July 10, 2009. The regulations include standards for both federally regulated appliances and non-federally regulated appliances.

Title 24 of the California Code of Regulations contains regulations governing the design and construction of buildings in California. These standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption and have been updated periodically to include new energy efficiency technologies and methods. The Building Standards were most recently revised in 2022, effective January 1, 2023. Part 6, Title 24, provides energy efficiency standards for both residential and nonresidential buildings. Part 11, Title 24, is the California Green Building Code (also known as CALGreen) was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality. In addition, Chapter 5, Section 5.408, of the 2022 CALGreen

Code requires all construction contractors to recycle and/or salvage for reuse a minimum of 65 percent of construction waste and demolition debris. 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 will be sorted on-site or mixed; and identifying diversion facilities where the materials collected will 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, Section 5.408.3 of the 2022 CALGreen Code requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

Local

Sacramento County 2030 General Plan

The "Energy" Element of the Sacramento County General Plan (County of Sacramento 2017) contains the following policy related to utility energy resources:

- **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 goals 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 County Climate Action Plan

The Sacramento County Board of Supervisors approved the 2024 Final Climate Action Plan (CAP) on November 6, 2024. While the CAP is focused on overall opportunities to reduce greenhouse gas (GHG) emissions, several of the actions/measures focus specifically on energy efficiency, energy conservation, and opportunities for renewable energy generation and use. Strategies include retrofit of existing buildings to improve energy efficiency, adoption of specific performance standards for energy efficiency requirements in new buildings, and replacing natural gas use in County buildings with electricity as a cleaner energy source. Measure GHG-03 specifically acknowledges the intent to support the SMUD Zero Carbon Plan (Sacramento County 2024):

Measure GHG-03. Support the SMUD Zero Carbon Plan.

- Action GHG-03-b: Coordinate with SMUD to identify potential sites for renewable generation and storage projects in the unincorporated county that would best support overall grid functionality while also supporting other measures to electrify the building stock and maximizing the use of existing electrical infrastructure.

SMUD Resource Planning Report

SMUD adopted an Integrated Resource Plan (IRP) in 2018, supplemented by the Resource Planning Report adopted in 2019, consistent with requirements under the Clean Energy and Pollution Reduction Act (SB 350) to adopt an IRP that met specific RPS procurement and GHG reduction goals, while considering other goals, such as reliability, ratepayer impacts, and effects on disadvantaged communities. The Resource Planning Report provides guidance for serving the needs of residents and businesses within its service area, while fulfilling regulatory requirements. The report contains the following objectives that are relevant to the proposed project.

- Provide dependable renewable resources to meet 33 percent of SMUD's retail sales by 2020, 44 percent by 2024, 52 percent by 2027, and 60 percent of its retail sales by 2030 and thereafter, excluding additional renewable energy acquiring for certain customer programs.

- In meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits.

- SMUD will continue exploring additional opportunities to accelerate and reduce carbon in [its] region beyond the GHG goals in this policy.

SMUD adopted its 2022 IRP, including the 2030 Zero Carbon Plan, in June 2022 and submitted it to the CEC for review in September 2022. On April 26, 2024, the CEC published the Review of the SMUD 2022 IRP and determined that SMUD's 2022 IRP is consistent with the requirements of Public Utilities Code Section 9621, and meets California's energy and other policy goals (CEC 2024a). Details of the SMUD 2030 Zero Carbon Plan are included below.

SMUD 2030 Zero Carbon Plan

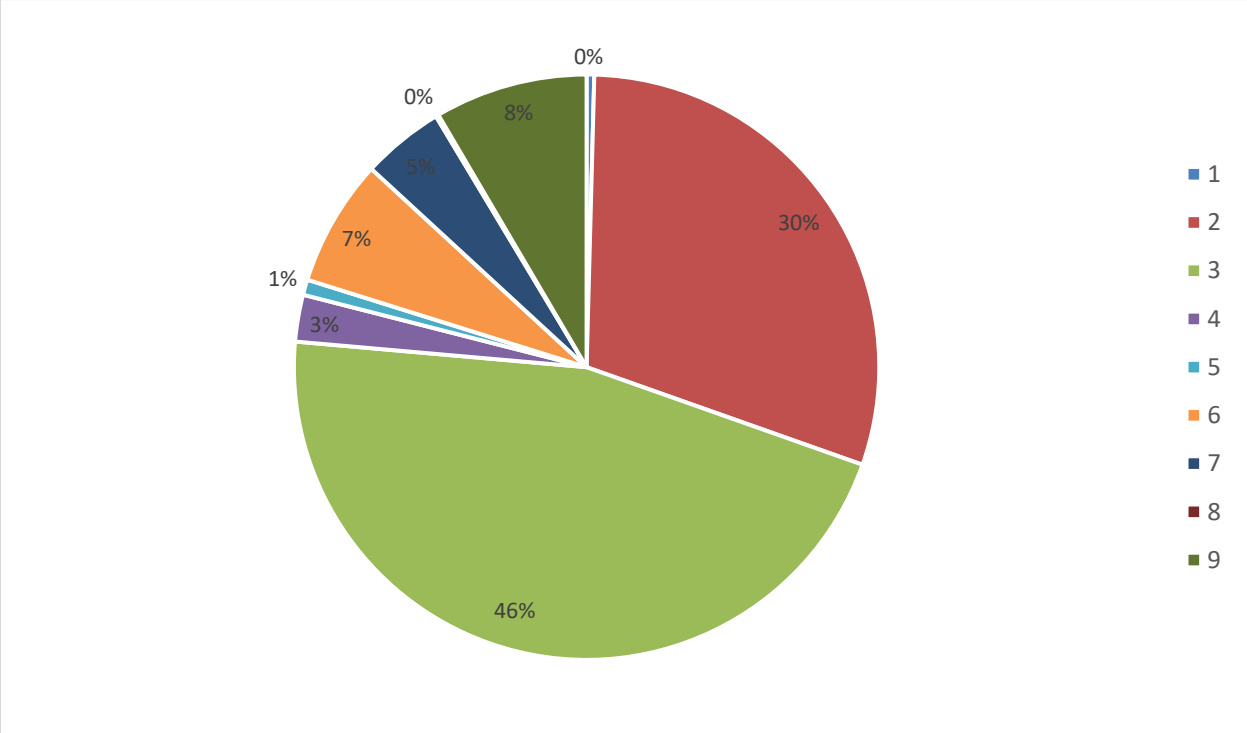
The 2030 Zero Carbon Plan is SMUD's strategy to eliminate carbon emissions from its power supply by 2030, which is more ambitious than already aggressive state mandates and is ahead of virtually all other major utilities in the United States. SMUD's 2030 Zero Carbon Plan is a road map to achieve the zero carbon goal while ensuring that all customers and communities SMUD serves reap the benefits of decarbonization. To achieve zero carbon, SMUD is focused on four main areas: repurposing existing natural gas generation power plants to eliminate GHG emissions; using proven clean technologies including solar, wind, and geothermal energy and battery storage; testing pilot projects and programs to test and prove new and emerging technologies; and identifying savings and pursuing partnerships and grants that support the Zero Carbon Plan.

3.6.2 Environmental Setting

State Energy Resources

As of 2023, California's total energy consumption is the second highest in the nation, but the state's per-capita energy consumption was the fourth-lowest, due in part to its mild climate and its energy efficiency programs (U.S. Energy Information Administration [EIA] 2024a).

Exhibit 3.6-1 shows the relative end-use consumption of energy resources in California by source in 2022, as reported by the EIA (EIA 2024a). Total consumption was approximately 6,882 trillion British thermal units (Btus), primarily in the form of petroleum (46 percent) and natural gas (30 percent).



Source: EIA 2024a.

Exhibit 3.6-1. California Energy Consumption by Source (2022)

Electricity

Electricity supply in California involves a complex grid of power plants and transmission lines located in the Western United States, Canada, and Mexico.

In 2023, California ranked first in the nation as a producer of electricity from solar and geothermal resources and second in the nation in biomass and conventional hydroelectric power generation (EIA 2024a). California is the fourth-largest electricity producer in the nation, with renewable resources, including hydropower and small-scale (less than 1-

megawatt [MW]), customer-sited solar photovoltaic (PV) systems, supplying more than half of California's in-state electricity generation, natural gas-fired power plants providing two-fifths, and less than one-tenth coming from nuclear power in 2023; about 0.1 percent of the state's net utility-scale generation is fueled by coal, and it is all from one industrial cogeneration plant (EIA 2024a). In 2023, solar supplied 16 percent of the state's utility-scale electricity net generation, and when accounting for small-scale solar generation, solar energy currently provides approximately 28 percent of the state's total net generation.

California imports more electricity than any other state and typically receives between one-fifth and one-third of its electricity supply from outside of the state. In 2023, approximately 23 percent of state's power supply came from out of state (CEC 2024b). More than 60 percent of the out-of-state supply delivered to California in 2023 was from renewable energy resources. Approximately seven percent of the out-of-state supply was from coal-fired power plants (for a total contribution of coal to the state's electricity supply from imports and in-state generation of less than two percent); the percent of imported electricity supply from coal-fired generation is anticipated to continue to decrease due to the California Emissions Performance Standards established in 2006 by SB 1368 limiting California utilities' new long-term financial investments in baseload generation with high-carbon dioxide emissions (e.g., coal-fired generation).

Petroleum

California ranks third in the nation in petroleum refining capacity, with refining centers processing crude oil from within the state and offshore waters, as well as imported crude oil (EIA 2024a). To meet state environmental regulations, California refineries are configured to produce cleaner fuels than facilities in other states. Refineries in the state often operate at or near maximum capacity because of the high in-state demand for those petroleum products and the lack of interstate pipelines that can deliver them into the state.

California is the second-largest consumer of petroleum products and accounts for 9 percent of the nation's total petroleum consumption. Of the petroleum consumed in California, 85 percent is used in the transportation sector, which accounts for the largest share – approximately 40 percent – of the state's end-use energy consumption. As part of an overall program to reduce emissions from motor vehicles (CaRFG regulations, California Code of Regulations, Title 23, Sections 2250-2273.5) California requires that all motorists use a specific blend of motor gasoline called CaRFG (California Reformulated Gasoline).

Natural Gas

California accounts for less than 1 percent of total U.S. natural gas reserves and production. The state is second in natural gas end-use consumption in the country, approximately 31 percent of which serves the state's industrial sector and 32 percent of which serves the state's electric power sector (EIA 2024a).

Regional Energy Resources

SMUD provides electricity services to the larger Sacramento area. SMUD's service area encompasses approximately 900 square miles, including most of Sacramento County, and small portions of Placer and Yolo Counties. In 2022, SMUD delivered approximately 10,662 Gigawatt hours of electricity within its service area (CEC 2024c).

SMUD obtains power from various sources, including hydropower, natural-gas-fired generators, renewable energy resources (i.e., solar, wind, hydroelectric, and biomass), and power purchased from other utility companies. As of 2023, eligible renewables provide 45 percent of SMUD's resource portfolio, large hydroelectric provides 33 percent, and natural gas provides 22 percent (SMUD 2024a). The SMUD resource portfolio also includes over 340 MW of solar generation, as well as individual customers within the SMUD network operating rooftop solar panels totaling 210 MW of renewable capacity (SMUD 2024b). In addition to its base plan, SMUD offer four options to customers to purchase energy from only renewable energy resources. The Greenergy Local Renewable and SolarShares options provide 100 percent of customer's energy from solar resources, while the other options, Greenergy PartnerPlus and Greenergy CA Renewable, provide 85 and 100 percent, respectively, of customer's energy from a mix of wind and solar resources (SMUD 2024a).

3.6.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The proposed project's construction activities would consume energy in the form of diesel and gasoline fuels to power construction-related equipment and on-road vehicles, as well as on-site electricity to power construction-related facilities. Project operational energy requirements would be limited to transportation energy for operations and maintenance crews traveling to and from the site, fuel to power the periodic use of maintenance equipment, and diesel fuel in the case of use of emergency generators, the use of which would be infrequent and temporary. The project's 75-MW capacity is estimated to generate between approximately 189,557 megawatt hours (MWh) per year and 196,231 MWh per year.

Energy impacts were analyzed by estimating energy consumption associated with construction and operation of the proposed project. For the purposes of fuel consumption associated with construction vehicles and equipment, as well as operational vehicle activity, GHG emissions estimates were converted to an estimated fuel consumption using EIA's GHG equivalency factors for diesel and gasoline fuel (EIA 2024b). Additional details are provided in Appendix AQ-1 of this Draft EIR.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the proposed project would result in a potentially significant impact on energy if it would result in any of the conditions listed below.

- Wasteful, inefficient, or unnecessary consumption of energy resources during proposed project construction or operations.
- Conflict with or obstruction of a state or local plan for renewable energy or energy efficiency.

Appendix F of the CEQA Guidelines provides guidance on determining whether a project would result in wasteful, inefficient, or unnecessary consumption of energy resources. As stated in Appendix F, the goal of conserving energy implies the wise and efficient use of energy, and the means of achieving this goal include the following:

- Decreasing overall per capita energy consumption.
- Decreasing reliance on fossil fuels such as coal, natural gas, and oil.
- Increasing reliance on renewable energy sources.

Impact Analysis

Impact 3.6-1. Result in a 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, as well as electricity to support temporary on-site construction trailers. Fuel consuming activities would include the use of heavy-duty construction equipment, vendor and haul truck trips for materials transport, and worker commute trips to and from the project site. Table 3.6-1 summarizes the estimated construction-related energy consumption that would occur over the anticipated construction duration. See Appendix AQ-1 for energy consumption inputs, assumptions, and calculations.

Table 3.6-1. Construction Energy Use

Energy Consuming Component	Diesel (gallons)	Gasoline (gallons)
Equipment Use	938,201	0
On-Site Vehicle Use	7,212	0
Off-Site On-Road Vehicles	72,329	134,866
Off-Road Gators	14,072	0
Total	**1,031,813**	**134,866**

Notes: Totals shown are for the duration of construction.
Source: Modeled by AECOM in 2024 (see Appendix AQ-1)

Fuel consumption rates would vary over the construction process based on the intensity of construction activities. This includes factors such as the amount and duration of equipment use, as well as the number of vehicle trips and distances traveled during each phase of construction. As noted, minor electrical consumption would also be required to provide power to on-site construction trailers. On-site construction trailers would reduce the travel to and from the site that would be otherwise required of on-site supervisors utilizing the trailers. The proposed construction-related activities and associated equipment use are 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.

The construction contractor would also be required, in accordance with Mitigation Measure 3.8-1, Implement Construction GHG Emission Best Management Practices during Construction Activities, 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 3.8-1, Implement Construction GHG Emission Best Management Practices during Construction Activities, 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.

Additionally, the proposed project does not include unusual characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites. 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 PV solar power and battery storage facility and interconnection facilities, which would provide new power production capacity of up to 75 MW delivered at the point of interconnection with the grid managed by SMUD. Operational activities associated with the proposed project would include regular inspection and maintenance activities, including one worker passenger vehicle trip per day and one maintenance vehicle trip every 2 weeks. Panel washing would be infrequent, estimated to occur for up to 3 weeks (i.e., 15 days) per year. Operational activities would typically be limited to two daily worker trips, but could include days of concurrent maintenance activities, in which maximum daily emissions would be slightly higher than usual. A backup generator would be on-site, but use would be limited to emergency backup requirements and required periodic testing. As noted in Table 3.6-2, the total annual energy consumption represents a conservative worst-case year of vehicle and equipment use reflective of maximum daily operations and maintenance requirements, and typical annual vehicle trips and equipment use, and therefore, energy consumption, would be much lower. 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 SMUD's overall power generation capacity and portfolio of eligible renewable resources contributing to its overall power mix. When considered in the context of the proposed renewable resource power that would be generated as a result of the proposed project, the project would generate much more energy than would be required to run the operations and maintenance components of the proposed project.

Table 3.6-2. Annual Operational Energy Use and Generation

Energy Consuming Component	Diesel (gallons)	Gasoline (gallons)	Electricity (kWh)
Vehicle Use	1,256	1,271	928
Off-road Equipment Use	3,565	0	0
Backup Generator	19	0	0
Water Consumption	0	0	290
Total	**4,840**	**1,271**	**1,218**

Notes: Total shown are for a single year, assuming a 'worst-case' operational day of all operational activities overlapping for 365 days.
Source: Modeled by AECOM in 2024 (see Appendix AQ-1)

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 is as a power generation facility which would increase SMUD's renewable power resources and overall generation capacity, resulting in a net increase in renewable energy resources. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy, and this impact would be **less than significant**.

Impact 3.6-2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The federal government, the state, and local jurisdictions, including SMUD, have policies, regulations, and plans established to promote renewable energy and energy efficiency.

SMUD resource procurement plans have been developed to meet the directive by its Board of Directors to use dependable renewable resources to eliminate carbon emissions from its power supply by 2030, as described in SMUD's 2030 Zero Carbon Plan. This goal is consistent with Senate Bill 350, which was signed into law in 2015. Senate Bill 100 accelerated the deadline for reaching the 50 percent milestone to 2026, stepping to 60 percent by 2030. The law also establishes as state policy that renewable energy resources and zero-carbon resources are to supply 100 percent of retail sales of electricity to California end use customers by 2045. SMUD has the ambitious goal of becoming 100 percent carbon free by 2030, ahead of the state target.

As a solar facility generating renewable energy, the proposed project would provide carbon free energy, directly advancing SMUD's 2030 Zero Carbon Plan. The project

would support plans to meet and exceed state plans and regulations without affecting any plans relating to energy efficiency.

Furthermore, the proposed project supports Sacramento County General Plan Policy EN-19 to support the development and use of renewable sources of energy such as solar, as well as Sacramento County Sustainability Plan Measure GHG-03, which aims to support SMUD's 2030 Zero Carbon Plan. 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**.

3.7 Geology, Soils, and Paleontological Resources

This section describes the existing geologic conditions at the project site, including geology, seismicity, and soils, and analyzes the potential hazards and impacts associated with project implementation related to these conditions such as seismic hazards, soil conditions, and other geotechnical considerations that could affect people and structures. This section also provides a brief description of the laws, regulations, and ordinances pertinent to the proposed project.

This section also provides an analysis of potential impacts on unique paleontological resources. Paleontological resources (fossils) are the remains of prehistoric plants and animals. Fossil remains such as bones, teeth, and wood are found in the geologic deposits (rock formations) in which they were originally buried. A paleontological sensitivity assessment, based on the rock formations at the project site and the results of a records search are included in this section. The analysis describes potential impacts on unique paleontological resources and recommends mitigation measures.

3.7.1 Regulatory Setting

Federal

Earthquake Hazards Reduction Act, Public Law 95–124

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program. This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives.

The mission of the National Earthquake Hazards Reduction Program includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The National Earthquake Hazards Reduction Program Act designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other National Earthquake Hazards Reduction Program Act agencies include the National Institute of Standards and Technology, National Science Foundation, and U.S. Geological Survey (USGS).

State

Alquist-Priolo Earthquake Fault Zoning Act, California Public Resources Code Sections 2621–2630

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (California Public Resources Code Sections 2621–2630) was passed in 1972 to reduce the hazard of surface faulting on structures designed for human occupancy. The main purpose of the law is to prevent the construction of structures used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. Earthquake Fault Zones are generally one-quarter mile wide or less (i.e., approximately 650 feet on both sides of the actual fault trace). The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed structures would not be constructed across active faults.

Seismic Hazards Mapping Act, California Public Resources Code Sections 2690–2699.6

The Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690–2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that respective cities or counties with jurisdiction over a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

National Pollutant Discharge Elimination System

In California, the State Water Resources Control Board (SWRCB) administers regulations promulgated by the U.S. Environmental Protection Agency (55 Code of Federal Regulations 47990) requiring the permitting of stormwater-generated pollution under the National Pollutant Discharge Elimination System (NPDES). In turn, the SWRCB's jurisdiction is administered through nine regional water quality control boards. Under these federal regulations, an operator must obtain a general permit through the NPDES Stormwater Program for all construction activities with ground disturbance of 1 acre or more. SWRCB's statewide storm water general permit for construction activity (Order WQ 2022-0057-DWQ) requires the implementation of best management practices (BMPs) to reduce sedimentation into surface waters and to control erosion. One element of compliance with the NPDES permit is preparation of a storm water pollution prevention plan (SWPPP) that addresses control of water pollution, including sediment, in runoff

during construction. (See Section 3.10 of this Draft EIR, “Hydrology and Water Quality,” for more information about the NPDES permit program and SWPPPs.)

California Building Standards Code, California Code of Regulations Title 24

The California Building Standards Commission is responsible for coordinating, managing, adopting, and approving building codes in California. The State of California provides minimum standards for building design through the California Building Standards Code (CBC) (CCR Title 24). Where no other building codes apply, Chapter 29 of the CBC also regulates excavation, foundations, and retaining walls. The CBC applies to building design and construction in the state and is based on the Federal Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed or more stringent regulations.

The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The CBC requires an evaluation of seismic design that falls into Categories A–F (where F requires the most earthquake-resistant design) for structures designed for a project site. The CBC philosophy focuses on “collapse prevention,” meaning that structures are designed for prevention of collapse for the maximum level of ground shaking that could reasonably be expected to occur at a site. Chapter 16 of the CBC specifies exactly how each seismic design category is to be determined on a site-specific basis through the site-specific soil characteristics and proximity to potential seismic hazards.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls. This chapter regulates the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also regulates analysis of expansive soils and the determination of the depth to groundwater table. For Seismic Design Category C, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading. For Seismic Design Categories D, E, and F, Chapter 18 requires these same analyses plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also requires mitigation measures to be considered in structural design. Mitigation measures may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. Peak ground acceleration must be determined from a site-specific study, the contents of which are specified in CBC Chapter 18.

Finally, Appendix Chapter J of the CBC regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

Public Resources Code Section 5097.5 – Paleontological Resources

California Public Resources Code (PRC) Section 5097.5 prohibits excavation or removal of any "…vertebrate paleontological site, including fossilized footprints…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." Section 5097.5 also states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor. Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. SMUD is a special district, acting as the CEQA lead agency and is implementing PRC sections aimed at protecting sensitive resources.

Local

Sacramento County 2030 General Plan

The *Sacramento County General Plan* (Sacramento County 2017) Conservation and Safety Elements include the following policies related to geology, soils, and paleontological resources that apply to the project:

Conservation Element

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.

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.

Safety Element

Policy SA-1. The County shall require geotechnical reports and impose the appropriate mitigation measures for new development located in seismic and geologically sensitive areas.

3.7.2 Environmental Setting

Geology

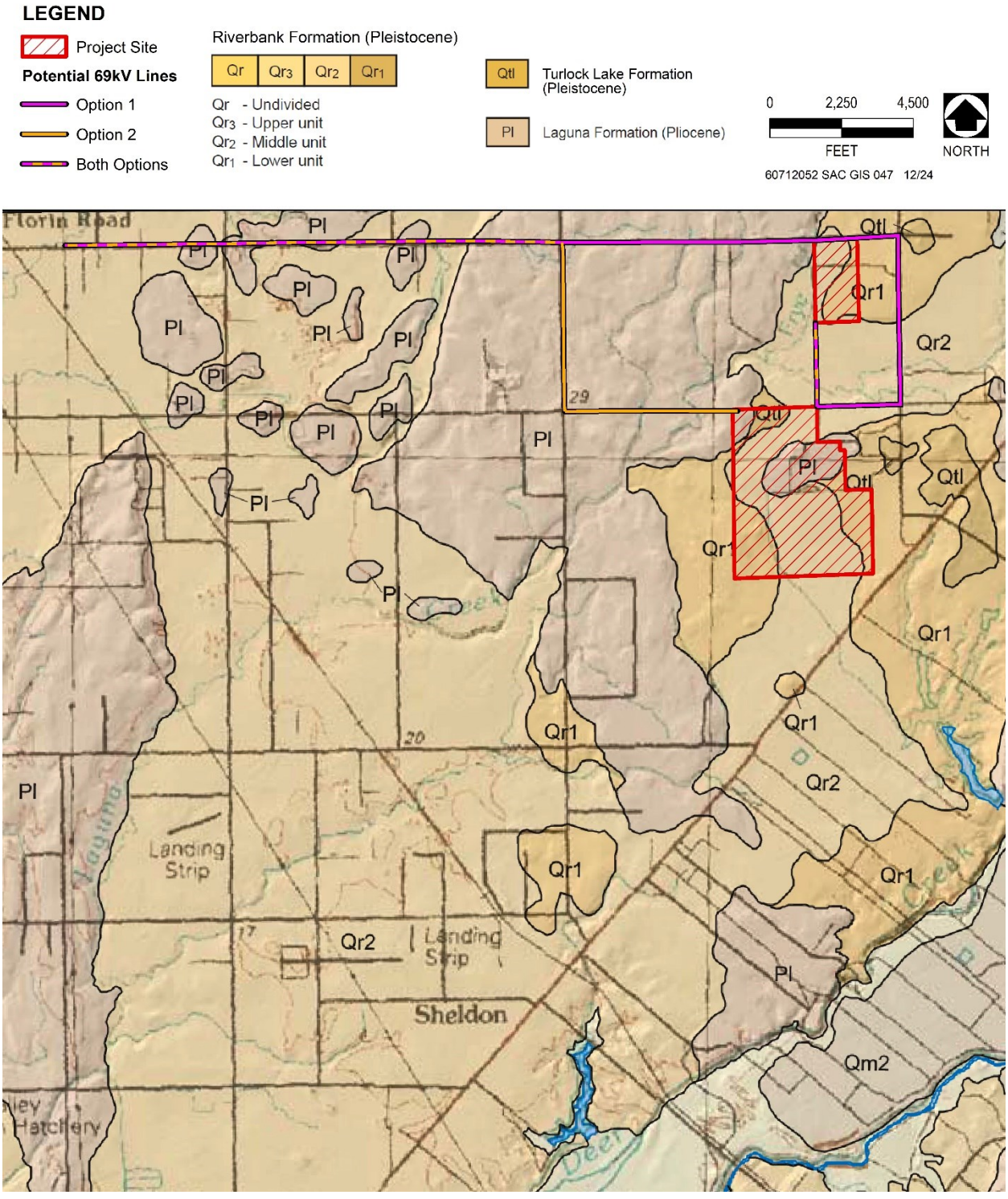
The project site and the distribution line alignments are situated in the Sacramento Valley. The Sacramento Valley is part of the Great Valley Geomorphic Province, which includes approximately 33,000 square miles and fills a northwest-trending structural depression bounded on the west by the Great Valley 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 and local geologic maps (Dawson 2009, Helley and Harwood 1985, and Wagner et al. 1981), the project site and the distribution line alignments are underlain by several different rock formations of varying compositions and ages, as shown in Exhibit 3.7-1 and described in Table 3.7-1.

Paleontological Resources

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.



Source: Dawson 2009

Exhibit 3.7-1. Geologic Formations

Table 3.7-1. Paleontological Sensitivity Assessment

Formation Name and Age	Composition	Fossils	Sensitivity
Riverbank Formation, Pleistocene (approximately 130,000 to 450,000 years B.P.)	Weathered reddish gravel, sand, and silt that form higher alluvial fans and terraces of major rivers. In the Sacramento Valley, this formation contains more mafic igneous rock fragments as compared to the San Joaquin Valley, where the Riverbank tends to contain more arkosic alluvium (130,000 to 450,000 years Before Present).	There are nine recorded vertebrate fossil localities in the Sacramento area in sediments referrable to the Riverbank Formation. Localities have yielded remains of Rancholabrean-age mammoth, bison, camel, coyote, horse, Harlan's ground sloth, mammoth, antelope, deer, rabbit, woodrat, fish, mole, mice, squirrel, snake, and gophers, dire wolf, frog, Pacific pond turtle, and the family Anatidae (ducks, geese, and swans). There are numerous additional vertebrate fossil localities from the Riverbank Formation and from similar unnamed Rancholabrean-age alluvial sediments in Yolo, San Joaquin, Merced, Stanislaus, Fresno, and Madera Counties.	High
Turlock Lake Formation, Pleistocene (approximately 600,000 to 900,000 years B.P.)	Arkosic (i.e., having a high percentage of feldspar), deeply weathered and dissected gravels with minor resistant metamorphic rock fragments and quartz pebbles; sand and silt are also present along the south and east sides of the Sacramento Valley. This formation represents eroded alluvial fans derived primarily from the plutonic rocks of the Sierra Nevada to the east.	The Fairmead Landfill site, in Chowchilla, contains Pleistocene-age fossils that were originally discovered in 1993 during excavation activities for a new Madera County landfill. Since 1993, more than 15,000 fossil specimens from over 35 different species have been recovered from the Fairmead site, including mammoth, ground sloth, giant short-faced bear, saber tooth cat, wolf, deer, camel, horse, antelope, rodents, birds, reptiles, fish, and prehistoric vegetation. Fossil specimens from a Pleistocene-age camel were recovered from sediments of the Turlock Lake Formation in Fresno County, along with a variety of plant fossils from several localities in Fresno County.	High
Laguna Formation, Pliocene (approximately 3 to 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 published one 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

Notes: B.P. = Before Present; UCMP = University of California, Berkeley Museum of Paleontology

Sources: Dundas et al. 1996, Hanson 2008, Hay 1927, Helley and Harwood 1985, Hilton et al. 2000, Jefferson 1991a and 1991b, Kolber 2004, Marchand and Allwardt 1981, Stirton 1939, Wagner et al. 1981, UCMP 2024

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 3.7-1 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) in December 2024.

Seismic Hazards

Fault Ground Rupture

Geologists have determined that the greatest potential for surface fault rupture and strong seismic ground shaking is from active faults, that is, faults with evidence of activity during the Holocene epoch (the last 11,700 years). Surface rupture is an actual cracking or breaking of the ground along a fault during an earthquake. Structures and underground pipelines that are built over a fault can be torn apart if surface ground rupture occurs. Faults that are the most likely to result in surface rupture are classified under the Alquist-Priolo Earthquake Fault Zoning Act (see Section 3.7.1, “Regulatory Setting,” above). The project site and the distribution line alignments are not located in or near an Alquist-Priolo Earthquake Fault Zone (California Geological Survey [CGS] 2022). The nearest fault zoned under the Alquist-Priolo Act is the Green Vally Fault, approximately 53 miles west of the project site in the Coast Ranges (CGS 2022).

Seismic Ground Shaking

Ground shaking—motion that occurs as a result of energy released during faulting—could potentially result in the damage or collapse of buildings and other structures, depending on the magnitude of the earthquake, the distance to the epicenter, and the character and duration of the ground motion. Other important factors to be considered are the characteristics of the underlying soil and rock and, where structures exist, the building materials used and the workmanship of the structures.

The Sacramento Valley has historically not been seismically active. The nearest active faults are the Cordelia and Green Valley Fault Zones, approximately 50 and 53 miles west of the project site and the distribution line alignments, respectively (Jennings and Bryant 2010). The Foothills Fault System is approximately 23 miles northeast and southeast of the project site and the distribution line alignments, but faults in this area to the east are not classified as active (Jennings and Bryant 2010).

Calculations of earthquake shaking hazard for California are part of a cooperative project between the USGS and CGS, and are part of the National Seismic Hazard Mapping program. Earthquake shaking hazards are calculated by projecting earthquake rates based on earthquake history and fault slip rates, the same data used for calculating earthquake probabilities. Fault parameters are developed for these calculations by the Working Group on California Earthquake Probabilities. A probabilistic seismic hazard map is a map that shows the hazard from earthquakes that geologists and seismologists agree could occur in California. It is "probabilistic" in the sense that the analysis takes into consideration the uncertainties in the size and location of earthquakes and the resulting ground motions that can affect a particular site. The 2016 map showing the probabilistic *Earthquake Shaking Potential for California* (Branum, et al. 2016, digitized by the California Department of Conservation in 2018) indicates that the project site and the distribution line alignments are in one of the lowest potential shaking hazard intensities. Regions in the low intensity categories are distant from known, active faults and are projected to experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent large magnitudes earthquakes could still cause strong ground shaking (Branum, et al. 2016). The peak horizontal ground acceleration calculated by Kleinfelder (0.197g) as part of the *Geotechnical Investigation Report* prepared for the proposed project also indicates that a low level of seismic shaking would be anticipated at the project site (Kleinfelder 2025).

Landslides

The topography at the project site is generally flat (0 to 5 percent). The elevation varies between approximately 85 feet above mean sea level (msl) and 120 feet above msl. The surrounding area is also nearly flat. There are no steep slopes where landslides would represent a hazard either within or near the project site and the distribution line alignments.

Liquefaction and Lateral Spreading

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and become fluid, similar to quicksand. The liquefaction potential depends on the type of soil, the level and duration of seismic ground motions, and the depth to groundwater. The locations that are most susceptible to liquefaction-induced damage have loose, water-saturated, granular sediment that is within 40 feet of the ground surface. Liquefaction poses a hazard to engineered structures, such as buildings, bridges, and underground utility pipelines, because the loss of soil strength

can result in bearing capacity insufficient to support foundation loads and increased lateral pressure on retaining walls.

Liquefaction-induced lateral spreading consists of the horizontal movement or spreading of upper soil layers (riding on top of liquefied soil) toward an open face, such as a streambank, the open side of fill embankments, or the sides of levees.

The depth to groundwater at the project site and the distribution line alignments in the fall of 2023 ranged from 120 to 130 feet below the ground surface (California Department of Water Resources 2023). Groundwater was not encountered in soil borings at the project site to the maximum depth explored of 31.5 feet below the ground surface (Kleinfelder 2025). Furthermore, the project site and the distribution line alignments are composed of well-consolidated Pleistocene- and Pliocene-age deposits, and active seismic sources are at least 50 miles away. Therefore, it is unlikely that the project site and the distribution line alignments would be subject to liquefaction in the event of a large magnitude earthquake (Kleinfelder 2025). Because liquefaction is unlikely, liquefaction-induced lateral spreading is also unlikely.

Soils

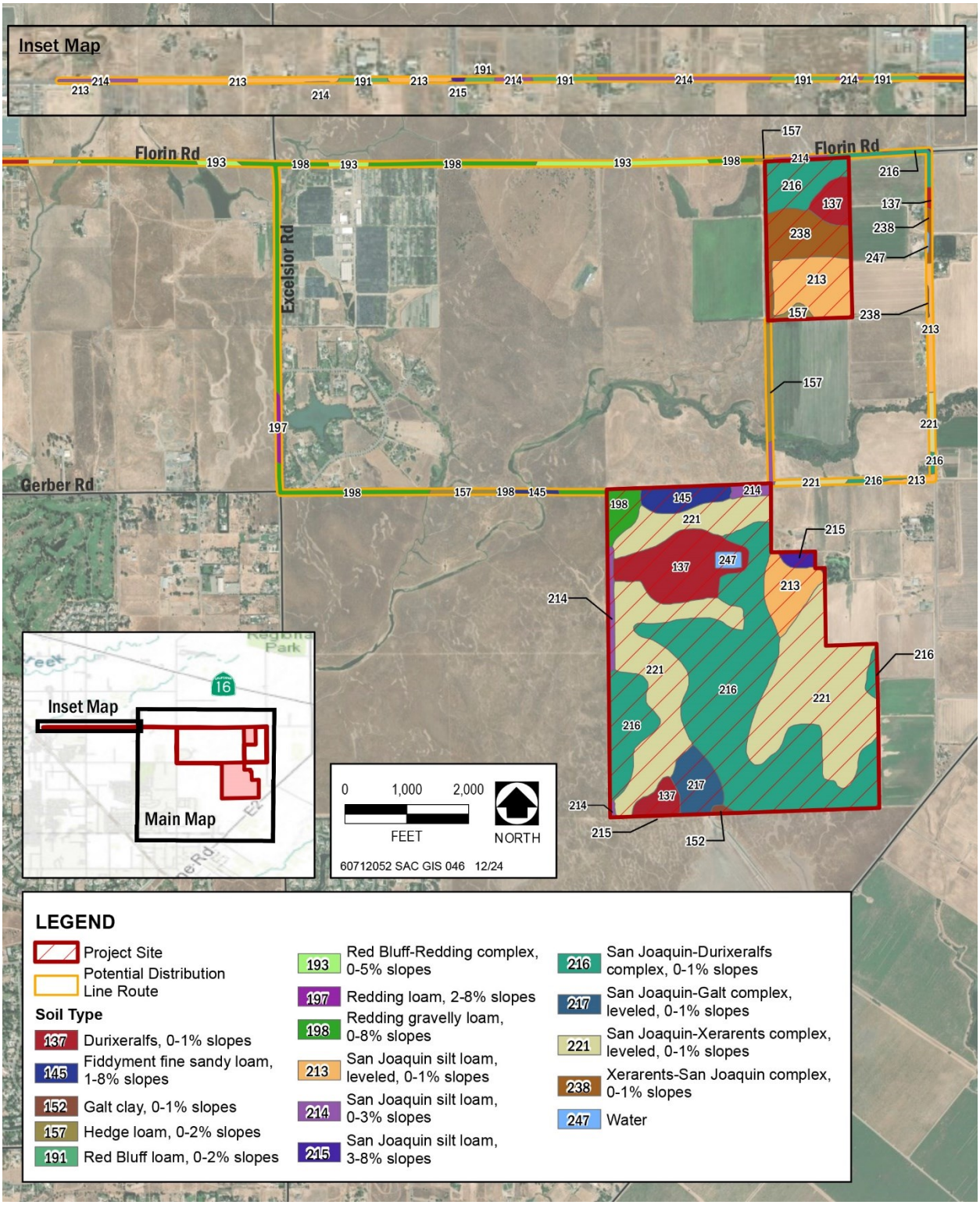
Soils present at the project site and along the distribution line alignments are shown in Exhibit 3.7-2. Soils along the road rights-of-way (i.e., distribution line alignments) have been heavily disturbed (including the placement of engineered fill) as a result of prior road construction activities. However, native soils are present on the project site where the solar panels, BESS, substation, and small office/storage container would be installed. The soil types at the project site and the relevant soil properties are listed in Table 3.7-1, based on a review of U.S. Natural Resources Conservation Service (NRCS 2024) soil survey data.

Soil Properties

Soil properties influence the development of building sites, including the engineering design, construction techniques, and site maintenance. The subsurface conditions at the project site and relevant soil properties are discussed below.

Subsurface Conditions

Soil borings conducted for the *Geotechnical Investigation Report* for the proposed project encountered interbedded sandy silt, silty and clayey sand, and sandy silty clay throughout the project site. A layer of hard, compacted soil (i.e., a cemented hardpan) was encountered at depths ranging from 2 to 10 feet at the project site. The soil consistency throughout the project site ranged from very stiff to hard (Kleinfelder 2025).



Source: NRCS 2024

Exhibit 3.7-2. Soil Types

Soil borings indicated that the subsurface conditions in area of the proposed BESS, substation, and office/storage container predominately consists of very stiff to hard fine-grained materials with varying amounts of sand, including silt, lean clay, and sandy silty clay. Coarse-grained materials, such as medium dense to very dense clayey sand and silty sand, were also present. The topsoil in this area was approximately 1 foot thick with roots, and a hardpan was encountered at a depth of approximately 4 to 6 feet below the ground surface (Kleinfelder 2025).

Table 3.7-2. Soil Types and Characteristics

Soil Name	Expansion Potential[1]	Wind Erosion Hazard[2]	Water Erosion Hazard[3]	Hydrologic Group
Durixeralfs, 0–1 percent slopes	High	4	Moderate	D
Fiddyment fine sandy loam, 1–8 percent slopes	Low	3	Moderate	D
Galt clay, 0–1 percent slopes	Very High	4	Moderate	D
Hedge loam, 0–2 percent slopes	Low	5	Moderate	C/D
Redding gravelly loam, 0–8 percent slopes	Low	6	Moderate	D
San Joaquin silt loam, levelled, 0–1 percent slopes	Low	6	Moderate	C
San Joaquin silt loam, 0–3 percent slopes	Low	6	Moderate	C
San Joaquin silt loam, 3–8 percent slopes	Low	6	Moderate	C
San Joaquin-Durixeralfs complex, 0–1 percent slopes	Low	6	Moderate	C
San Joaquin-Galt complex, levelled, 0–1 percent slopes	Low	6	High	D
San Joaquin-Xerarents[4] complex, levelled, 0–1 percent slopes	Low	N/R	N/R	N/R
Xerarents[4]-San Joaquin complex, 0–1 percent slopes	N/R	N/R	N/R	N/R

Notes: N/R = not rated.

[1] Based on plasticity rating; shrink-swell potential ratings of “moderate” to “very high” can result in damage to buildings, roads, and other structures.

[2] Soils assigned to wind erodibility group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

[3] Based on the erosion factor “Kw whole soil,” which is a measurement of relative soil susceptibility to sheet and rill erosion by water.

[4] Xerarents are found in Mediterranean climates (like the Sacramento area), and they do not have soil horizons because they have been deeply mixed by plowing, spading, or other methods of moving by humans. Xerarents are generally not rated by the NRCS in terms of soil characteristics.

Source: NRCS 2024

Expansion and Soil Bearing Capacity

Expansive soils have a high clay content, which greatly increase in volume when saturated with water and shrink when dried (referred to as “shrink-swell” potential). Soils with a moderate to high expansion potential can result in cracked foundations, structural distortions, and warping of doors and windows. Underground pipelines can also be damaged.

As shown in Table 3.7-2, most of the soils at the project site are rated by NRCS with a low expansion potential (NRCS 2024). The Galt clay soil, which is rated by NRCS with a very high expansion potential, only comprises 1 acre of the project site; the Durixeralfs

soil (rated with a high expansion potential), comprises approximately 44 acres of the 400-acre project site.

As part of the *Geotechnical Investigation Report,* Kleinfelder (2025) noted that laboratory test results from site-specific soil borings indicated that the project site soils possess low to moderate plasticity. Therefore, the soil layers in the subgrade may experience some (moderate) volume changes (i.e., expansion and contraction) with increasing and decreasing soil moisture.

Erosion and Stormwater Runoff

As shown in Table 3.7-2, soils at the project site are rated by NRCS with a low to moderate wind erosion hazard, and a moderate water erosion hazard (NRCS 2024).

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 and stormwater runoff potential when drainage plans are prepared for new development. Soils are assigned to groups A, B, C, or D. The project site soils are assigned to either Hydrologic Group C or D (NRCS 2024). Group D soils have a very slow water infiltration rate and a very high stormwater runoff potential. Group C soils have a slow water infiltration rate and a high stormwater runoff potential.

3.7.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The paleontological resources analysis relied on published geologic literature and maps, and a paleontological records search performed at the UCMP. The geology and soils analysis relied on published seismic, geologic, and groundwater data and maps; NRCS soil survey data; and the site-specific *Geotechnical Investigation Report* (Kleinfelder 2025). The information obtained from these sources was reviewed and summarized to present the existing conditions and to identify potential environmental impacts, based on the thresholds of significance presented in this section. Impacts associated with geology, soils, and paleontological resources that could result from project implementation were evaluated based on existing conditions; expected construction and operational practices; and the materials, locations, and duration of potential construction, operational, and maintenance activities.

Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to geology, soils, or paleontological resources if it would:

- directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
- strong seismic ground shaking;
- seismic-related ground failure, including liquefaction; or
- landslides;

- result in substantial soil erosion or the loss of topsoil;
- 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; or
- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property;
- 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; or
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Paleontological Resources

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on paleontological resources if it would

- directly or indirectly destroy a unique paleontological resource or site.

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.

Issues Not Discussed Further

Expose People or Structures to Hazards from Surface Fault Rupture—The project site and the distribution line alignments are not located within or near an Alquist-Priolo Earthquake Fault Zone, and the nearest known active faults are approximately 50 miles to the west near Cordelia (CGS 2022, Jennings and Bryant 2010). Therefore, **no impacts** related to loss, injury, or death involving rupture of a known earthquake fault would occur, and this issue is not addressed further.

Expose People or Structures to Hazards from Seismically Induced Liquefaction—Since active seismic sources are a relatively long distance away; the project site and the distribution line alignments are composed of stable, Pleistocene and Pliocene-age rock formations; and the depth to groundwater ranges from 120 to 130 feet below the ground surface, seismically-induced liquefaction or lateral spreading is unlikely (Kleinfelder 2025). Therefore, **no impact** would occur, and this issue is not addressed further.

Expose People or Structures to Hazards from Landslides—The project site and the distribution line alignments are characterized by nearly flat topography with slopes ranging from 0 to 5 percent, and there are no off-site areas of steep slopes that could affect the proposed facilities. Therefore, landslides would not represent a hazard and there would be **no impact**. This issue is not addressed further.

Soil Suitability for Septic Systems—During the project's construction phases, temporary portable restrooms would be used at the project site. The construction contractor would contract with a portable restroom supplier to provide facilities and to pump wastewater for off-site disposal. During the project's operation phase, personnel would occasionally visit the project site for system monitoring, maintenance, and repair activities. The proposed project would not include the construction of permanent restroom facilities, and the use of a portable sanitary facilities are anticipated. If SMUD determines that a small on-site septic system would be required for restroom facilities at a later date, SMUD would be required to follow the Sacramento 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 Sacramento County requirements to protect human health and the environment. Thus, there would be **no impact**, and this issue is not addressed further.

Destroy a Unique Geologic Feature—A unique geologic feature consists of a major natural element that stands out in the landscape, such as a large and scenic river, gorge, waterfall, volcanic cinder cone, lava field, or glacier. There are no unique geologic features at the project site and the distribution line alignments or within the project viewshed. Thus, there would be **no impact**, and this issue is not addressed further in this EIR.

Impact Analysis

Impact 3.7-1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

Strong seismic ground shaking?

The Sacramento Valley has historically experienced very low levels of seismic activity. The nearest known active faults that pose a hazard for strong seismic ground shaking are located within the Coast Ranges approximately 50 miles west of the project site and the distribution line alignments. Faults in the Foothills Fault System, approximately 23 miles to the east, are not classified as active (Jennings and Bryant 2010). The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, and site soil conditions. As discussed above in Section 3.7.2, “Environmental Setting,” the project site and the distribution line alignments are located in an area where the potential for strong seismic ground shaking is low, although it may still occur during the lifespan of the proposed project (Branum, et al. 2016; Kleinfelder 2025).

Development of the proposed project is required by law to comply with seismic safety standards of the CBC. The CBC philosophy focuses on “collapse prevention,” meaning that structures are designed for prevention of collapse for the maximum level of ground shaking that could reasonably be expected to occur at a site. Based on the seismic design category, the CBC requires 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. It also requires that measures to reduce damage from seismic effects be incorporated in structural design. Measures may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures.

A site-specific *Geotechnical Investigation Report* (Kleinfelder 2025) has been prepared according to CBC and County requirements (including County Municipal Code Article 16.44 related to grading), which contains appropriate engineering and design

recommendations related to seismic, soils, and other geologic considerations at the project site. SMUD is required by law to design and construct all facilities in compliance with the CBC (CCR Title 24), which includes implementing the recommendations contained in the geotechnical report to comply with CBC provisions that are specifically designed to prevent the collapse of structures during seismic ground shaking. Therefore, impacts from strong seismic ground shaking would be **less than significant**.

Impact 3.7-2. Result in substantial soil erosion or the loss of topsoil?

As shown in Table 3.7-2, soils at the project site generally have a low wind erosion hazard, and a moderate water erosion hazard (NRCS 2024). The project site soils are assigned to either Hydrologic Group C or D, which have high to very high stormwater runoff potentials due to their slow water infiltration rates (NRCS 2024).

The construction process associated with development of the proposed project would require a variety of earthmoving activities, including drilling, excavating, trenching, grading, and compacting. For purposes of this analysis, grading activities are assumed to potentially occur over a small portion of the project site. In addition, PV panel foundations would be fixed to the ground via driven piles and drilling would also occur for power poles along the distribution line alignment. Construction-related earthmoving activities would expose soils to potential erosion from wind and water. Earthmoving activities during the winter months would expose soils to rain events, which could mobilize loose soil and result soil erosion. Subsequent soil transport during storm events could result in sedimentation within and downstream of the project site. Furthermore, earthmoving activities during the summer months could result in wind erosion.

Prior to construction, SMUD would require the selected contractor to prepare a grading plan according to SMUD's standards which are aimed at avoiding and minimizing soil erosion.

Furthermore, project applicants are required by law to comply with the provisions of the SWRCB's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order WQ 2022-0057-DWQ) (Construction General Permit). The Construction General Permit regulates stormwater discharges for construction activities under the federal Clean Water Act, and applies to all land-disturbing construction activities that would disturb 1 acre or more. Project applicants must submit a notice of intent to discharge to the Central Valley RWQCB, and must prepare and implement a SWPPP that includes site-specific BMPs to minimize construction-related soil erosion. Construction techniques that could be implemented to reduce the potential for stormwater runoff and sediment transport may include minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup. BMPs that could be implemented to reduce erosion may include silt fences, staked straw bales/wattles, silt/sediment basins and traps, geofabric, trench plugs, terraces, water bars, soil stabilizers and re-seeding and mulching to revegetate disturbed areas. All NPDES permits also have inspection, monitoring, and reporting requirements.

Compliance with existing laws, regulations, and ordinances ensures that the short-term, temporary construction impacts from soil erosion would be **less than significant**. (Impacts from project construction and operation on water quality are evaluated in Section 3.10, “Hydrology and Water Quality.”)

Impact 3.7-3. 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?

The results of soil borings at the project site indicated that a cemented hardpan is present throughout the project site at depths ranging from 2 to 10 feet below the ground surface (Kleinfelder 2025). During the winter months, rainfall from storm events could result in perched groundwater within the soil profile above the cemented hardpan. The presence of heavy construction equipment on the ground surface during these conditions could result in liquefaction. Furthermore, the presence of heavy buildings, if water is allowed to accumulate in the subgrade, could also result in liquefaction or subsidence under these conditions.

The CBC includes engineering practices that require special design and construction methods to reduce or eliminate hazards from construction in unstable soil. SMUD is required by law to comply with the CBC, which also contains drainage-related requirements to reduce seasonal fluctuations in soil moisture content. Construction in soils of low strength is also addressed in the CBC through implementation of soil engineering tests and amending and compacting soils.

As required by the CBC, the *Geotechnical Investigation Report* (Kleinfelder 2025) includes recommendations to address the condition related to unstable soils. Recommendations include, construction work should only be performed in dry weather, and water should not be allowed to accumulate and pond in excavated areas or any surface prepared to receive structural fill. If any construction work must occur during wet weather, construction traffic and equipment should be limited to areas where the ground surface has been armored and to areas where the native materials have already been over excavated, graded, and compacted. Furthermore, the native soils should be replaced with engineered fill underneath foundations (i.e., for the BESS, substation, and office structure/storage container), or drilled pier or pile foundations should be used for these facility foundations, and appropriate stormwater drainage would be installed to ensure that water does not accumulate underneath foundations. Therefore, the impact from construction and operation in unstable soils is considered **less than significant**.

Impact 3.7-4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

As discussed in detail in Section 3.7.2, “Environmental Setting,” based on the laboratory test results from discontinuous layers of clay and silt that were encountered in soil borings at various locations and depths throughout the site, indicate these materials possess low

to moderate plasticity. Therefore, the clay layers in the subgrade may experience volume changes (i.e., expansion and contraction) with increasing and decreasing soil moisture.

The CBC includes engineering practices that require special design and construction methods to reduce or eliminate hazards from construction in expansive soil. SMUD is required by law to comply with the CBC, which ensures appropriate design and construction of building foundations to resist soil movement that would be implemented. In addition, the CBC also contains drainage-related requirements to reduce seasonal fluctuations in soil moisture content. Construction in soils of low strength is also addressed in the CBC through implementation of soil engineering tests and amending and compacting soils.

As required by the CBC, the *Geotechnical Investigation Report* addresses soil expansion potential. Kleinfelder (2025) indicated that drilled pile foundations constructed on undisturbed native soils or on properly placed engineered fill are capable of supporting the planned solar arrays. Kleinfelder (2025) also indicated that conventional mat foundations may be used for substation equipment provided that the native soil is excavated and removed, and engineered fill material is placed to a depth of 4 feet below grade to reduce the effects of shrink-swell, remove the soft, compressible clay layer, and enhance bearing capacity. If this approach is not desirable, Kleinfelder indicated that driven piles or drilled pier foundations may be used instead. Therefore, the impact from construction and operation in expansive soils is considered **less than significant**.

Impact 3.7-5. Directly or indirectly destroy a unique paleontological resource or site?

As shown in Exhibit 3.7-1, the project site and the distribution line alignments are underlain primarily by the Riverbank Formation, with small areas of the Turlock Lake and Laguna Formations. As discussed in detail in Section 3.7.2, “Environmental Setting,” the Laguna Formation is of low paleontological sensitivity. However, the Riverbank and Turlock Lake Formations are considered to be of high paleontological sensitivity, because numerous vertebrate fossil specimens have been recovered from both of these formations throughout the Sacramento and San Joaquin valleys. The Riverbank and Turlock Lake formations are present both at and beneath the surface throughout the project site and the distribution line alignments. Although most of the distribution line alignments have been disturbed and replaced within compacted artificial fill from previous road construction activities, a limited amount of native deposits could still be encountered during project-related earthmoving activities along existing roadways during the distribution line construction activities such as during excavation for pole placement. The proposed excavation and drilling for project-related solar array foundations, BESS/substation/office foundations, utility trenches, and roadways on the project site would occur within native sediments associated with the Riverbank and Turlock Lake Formations. Therefore, construction-related earthmoving activities throughout the project site and along the distribution line alignments could result in accidental damage to or destruction of unique paleontological resources, if present, and this impact is considered **potentially significant.**

Mitigation Measures

Mitigation Measure 3.7-1: Avoid Impacts to Unique Paleontological Resources.

To minimize the potential for destruction of or damage to previously unknown unique, scientifically important paleontological resources during earthmoving activities at the project site, SMUD shall do the following:

- Prior to the start of earthmoving activities, retain either a qualified archaeologist or paleontologist to develop relevant materials related to paleontological resources for inclusion in the project's Worker Environmental Awareness Program (WEAP) program to inform 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.

- If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify SMUD. SMUD shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan. The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum curation for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by SMUD to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resource or resources were discovered.

Significance after Mitigation

Implementation of Mitigation Measure 3.7-1 would reduce project-related impacts on unique paleontological resources to **less than significant** 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.

3.8 Greenhouse Gas Emissions

This section provides background information about greenhouse gas (GHG) emissions and climate change as they relate to the proposed project. GHG emissions have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. Cumulative GHG emissions from many projects and activities affect global GHG concentrations and the global 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 quantity 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) provided a comment letter noting that the SMAQMD Greenhouse Gas Thresholds for Sacramento County provides information on complying with SMAQMD thresholds of significance for GHG emissions, including when best management practices and mitigation should be implemented.

Additionally, SMAQMD noted that if the project intends to offset construction GHG emissions with operational reductions associated with the project, the reductions associated with offsetting construction emissions should not later be sold on the regulatory market or other GHG exchange. SMUD will not sell any renewable energy credits associated with the project and will retire all credits to comply with the California Renewables Portfolio Standard (RPS) obligations. Thus, while reported as a scoping comment here, this topic does not require further analysis.

3.8.1 Regulatory Setting

While most federal, state, regional, and local GHG-related plans, policies, and regulations do not directly inform proposed project implementation or impact determination, they are helpful for understanding the overall context for GHG emissions impacts, and related strategies to reduce GHG emissions.

Federal

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.,* 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that EPA had the authority to regulate GHGs.

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- *Endangerment Finding:* The current and projected concentrations of the six key GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.

- *Cause or Contribute Finding:* The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

State

The legal framework for GHG emission reductions has come about through Executive Orders, legislation, and regulations. The major components of California's climate change initiatives are outlined below.

Executive Order S-3-05

Executive Order S-3-05, issued in recognition of California's vulnerability to the effects of climate change, set forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 and the State Climate Change Scoping Plan

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions below 1990 levels by 2020. AB 32 also identifies California Air Resources Board (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.

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 Executive Order (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 Renewable Portfolio Standard

Established in 2002 by SB 1078, California's 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* (SMAQMD 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. As mentioned above, SMAQMD also responded in writing to the NOP for this EIR.

Sacramento County 2030 General Plan

The "Energy" Element of the County of Sacramento General Plan (County of Sacramento 2017a) 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 may be applicable to the project:

Objective II: Reduce the reliance on non-renewable energy sources with emphasis on those in shortest supply.

> **Policy EN-18.** Develop and implement standards for the protection of the solar rights of property owners.

To increase the amount of energy from wind, falling water, and geothermal sources, it is the policy of Sacramento County to:

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 goals 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 County Climate Action Plan

The Sacramento County Board of Supervisors approved the 2024 Final CAP on November 6, 2024. The CAP provides consistency with CARB's 2022 Climate Change Scoping Plan and AB 1279 and details specific measures that will be implemented in the County by 2030 to reduce GHG emissions from communitywide activities and government operations (County of Sacramento 2024). 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. Measure GHG-03 specifically acknowledges the intent to support the SMUD Zero Carbon Plan (County of Sacramento 2024):

Measure GHG-03. Support the SMUD Zero Carbon Plan.

- Action GHG-03-b: Coordinate with SMUD to identify potential sites for renewable generation and storage projects in the unincorporated county that would best support overall grid functionality while also supporting other measures to electrify the building stock and maximizing the use of existing electrical infrastructure.

SMUD Resource Planning Report

SMUD adopted an Integrated Resource Plan (IRP) in 2018, supplemented by the Resource Planning Report adopted in 2019, consistent with requirements under the Clean Energy and Pollution Reduction Act (SB 350) to adopt an IRP that met specific RPS procurement and GHG reduction goals, while considering other goals, such as reliability, ratepayer impacts, and effects on disadvantaged communities. The Resource Planning Report provides guidance for serving the needs of residents and businesses within its service area, while fulfilling regulatory requirements. The report contains the following objectives that are relevant to the proposed project.

- Provide dependable renewable resources to meet 33 percent of SMUD's retail sales by 2020, 44 percent by 2024, 52 percent by 2027, and 60 percent of its retail sales by 2030 and thereafter, excluding additional renewable energy acquiring for certain customer programs.

- In meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits.

- SMUD will continue exploring additional opportunities to accelerate and reduce carbon in [its] region beyond the GHG goals in this policy.

SMUD adopted its 2022 IRP, including the 2030 Zero Carbon Plan, in June 2022 and submitted it to the CEC for review in September 2022. On April 26, 2024, the CEC published the Review of the SMUD 2022 IRP and determined that SMUD's 2022 IRP is consistent with the requirements of Public Utilities Code Section 9621, and meets California's energy and other policy goals (CEC 2024). Details of the SMUD 2030 Zero Carbon Plan are included below.

SMUD 2030 Zero Carbon Plan

The 2030 Zero Carbon Plan is SMUD's strategy to eliminate carbon emissions from its power supply by 2030. SMUD's 2030 Zero Carbon Plan is a road map to achieve the zero carbon goal while ensuring that all customers and communities SMUD serves reap the benefits of decarbonization. To achieve zero carbon, SMUD is focused on four main areas: repurposing existing natural gas generation power plants to eliminate GHG emissions; using proven clean technologies including solar, wind, and geothermal energy and battery storage; testing pilot projects and programs to test and prove new and emerging technologies; and identifying savings and pursuing partnerships and grants that support the Zero Carbon Plan (SMUD 2021).

3.8.2 Environmental Setting

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 2021).

Global surface temperature has increased by approximately 1.96 degrees Fahrenheit (°F) over the last 140 years (IPCC 2021); the likely total human-caused global surface temperature increase is 1.93°F. The rate of increase in global average surface temperature has not been consistent; the last four decades have warmed at a much faster rate per decade (IPCC 2021).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2021).

Principal Greenhouse Gases and Sources

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources, waste treatment, and agricultural processes. The following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

- Carbon Dioxide (CO_2): Natural sources of CO_2 include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic (human) sources include burning of coal, oil, natural gas, and wood.

- Methane (CH_4): CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

- Nitrous Oxide (N_2O): N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, sewage

treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

- Fluorinated gases: These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes called High Global Warming Potential (High GWP) gases. These High GWP gases include:
    - Chlorofluorocarbons (CFCs): These GHGs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.
    - Perfluorinated Chemicals (PFCs): PFCs are emitted as by-products of industrial processes and are also used in manufacturing.
    - Sulfur hexafluoride (SF_6): This is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.[1]
    - Hydrochlorofluorocarbons (HCFCs): These have been introduced as temporary replacements for CFCs and are also GHGs.
    - Hydrofluorocarbons (HFCs): These were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which result in changes to the climate and environment.

Global Warming Potential (GWP)

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

[1] Effective January 1, 2022, the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear is prohibited due to its high global warming potential, outside of those uses explicitly exempted. In order to use SF_6 for a non-exempted purpose, entities must apply for an exemption with CARB.

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 Section 3.3 “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).

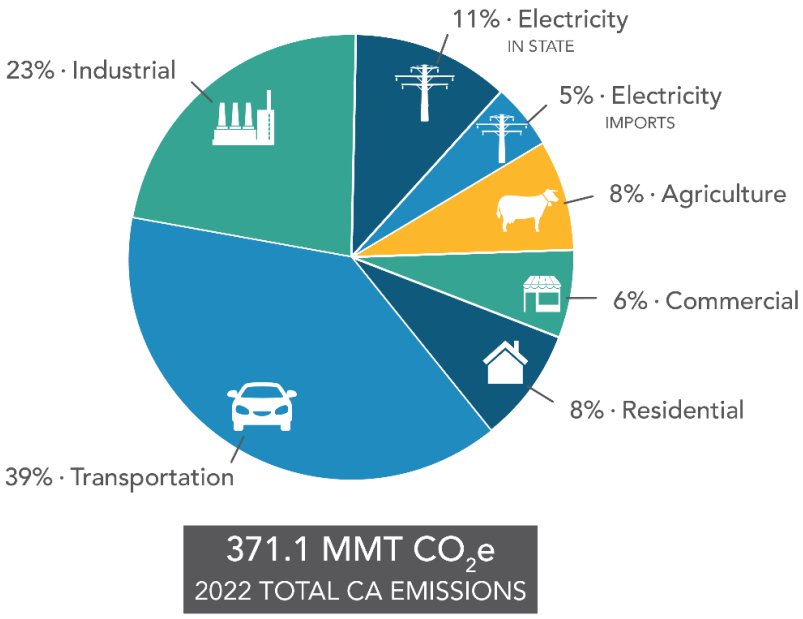
Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. As noted in the Sacramento Valley Regional Report of the California’s Fourth Climate Change Assessment (Houlton 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 (County of Sacramento 2017b). 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 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 Exhibit 3.8-1, 371.1 million MT CO_2e were generated in 2022. The transportation sector represents the single largest source of California’s GHG emissions in 2022, accounting for 39 percent of total GHG emissions. Transportation was followed by industrial sources, which accounted

for 23 percent, and then by the electricity sector (in-state sources and imported electricity), which accounted for 16 percent of total GHG emissions (CARB 2024a).

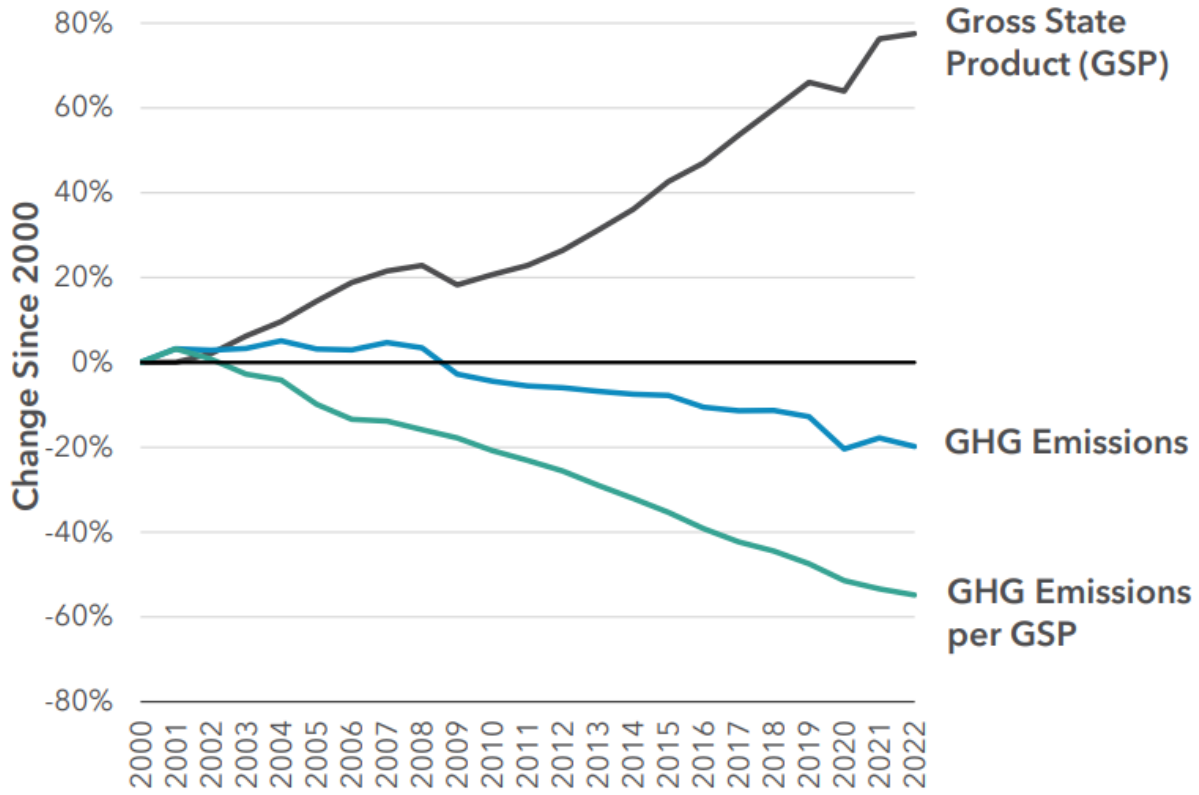


Source: CARB 2024a

Exhibit 3.8-1. 2022 California Greenhouse Gas Emissions Inventory by Sector

California has implemented several programs and regulatory measures to reduce GHG emissions. Exhibit 3.8-2 demonstrates California's progress in reducing statewide GHG emissions. Since 2007, California's GHG emissions have been declining, with the exception of 2021[2], even as population and gross state product have increased, demonstrating that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross state product [GSP]) is declining. From 2000 to 2022, the carbon intensity of California's economy decreased by 54.8% while the GSP increased by 77.5%. California's GSP increased 0.7% in 2022. Emissions per GSP declined by 3.1% from 2021 to 2022 (CARB 2024b).

[2] 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 2024b).



Source: CARB 2024b.

Exhibit 3.8-2. Trends in California Greenhouse Gas Emissions (Years 2000 to 2022)

3.8.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

Short-term construction activities and long-term operations of the proposed project would generate GHG emissions. Construction-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 Section 3.3 “Air Quality,” of this EIR. SF_6 is not proposed to be used as part of the project and is not included in the GHG emissions calculations for operations. The analysis also considered the potential 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.

Thresholds of Significance

GHG emissions have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the global climate system.

Therefore, impacts are analyzed within the cumulative context of the project's potential contribution to the significant impact of global climate change.

Based on Appendix G of the CEQA Guidelines, implementation of the proposed project would result in a cumulatively considerable contribution to the significant impact of climate change if it would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Section 15064.4(b) of the CEQA Statute and Guidelines, concerning determining the significance of impacts from GHG emissions, states that a lead agency may consider the following three factors in assessing the significance of impacts from GHG emissions.

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations.

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. Tier 1 Best Management Practices requires that projects be designed and constructed without natural gas infrastructure (BMP1), and that projects meet the current 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.

Impact Analysis

Impact 3.8-1. 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 in the short term as a result of project construction activities and long-term operational activities.

Construction

During construction, the use of off-road equipment and on-site vehicles, as well as construction-related vehicle trips to and from the site, would generate GHG emissions. GHG emissions would vary substantially depending on the intensity of equipment and vehicle use throughout each phase of construction. While project-specific construction phasing and duration was taken into account, the GHG emissions estimate is based on the anticipated maximum daily use of on-site equipment and vehicle use. Therefore, this approach represents a worst-case scenario of emissions that could be generated as a result of construction of the proposed project. While likely a conservative estimate, total worst-case, construction-related GHG emissions were used to evaluate the significance of the proposed project's construction emissions on the cumulative impact of global climate change. Total construction-related GHG emissions are estimated to be approximately 11,745 MT CO_2e. Based on the anticipated construction schedule and phasing, the most intensive activities and overlap of construction phases would occur in 2027. During this year, approximately 48 percent of the total construction duration, including overlapping phases, is projected to take place and generate approximately 6,216 MT CO_2e. As described previously, these emissions estimates assume the peak daily equipment and vehicle use would occur throughout each subphase, which is not typical of construction implementation. Regardless, even with this conservative assumption, the maximum annual emissions would exceed SMAQMD's mass emissions-

based screening threshold of 1,100 MT CO_2e per year. Therefore, this impact for construction would be **potentially cumulatively considerable**.

Operations

After construction, the proposed project would require minor operations and maintenance activities that would include one full-time staff visiting the site daily, intermittent trips to and from the site by other maintenance workers, and intermittent use of various equipment such as emergency generators. 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 3.8-1.

Table 3.8-1. Proposed Project Operational GHG Emissions in the First Operational Year

Proposed Project Operational Emissions Source	Total GHG Emissions (MT CO_2e per year)
Mobile	26.49
Area	0.07
Water	0.05
Waste	6.74
Refrigerants	0.16
Off-road	36.44
Stationary	0.19
Total Annual Emissions	**70.14**
SMAQMD Threshold	**1,100**
Exceeds Threshold?	**No**

Source: Modeled by AECOM in 2024 (see Appendix AQ-1)

Total annual GHG emissions that would be generated as a result of operations and maintenance activities would be approximately 70 MT CO_2e per year. When considering that this estimate reflects a conservative assumption of peak maintenance activities occurring year-round and does not consider future emissions reductions in vehicle and equipment operations due to increasing regulatory requirements and implementation of cleaner technology, long-term annual operations and maintenance emissions would likely be even less than presented here.

These operational GHG emissions would be less than the SMAQMD mass emissions-based screening threshold 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**.

The proposed project's contribution as a GHG-free energy resources is important to acknowledge as a valuable long-term benefit of the proposed project. As a GHG-free energy resource, the proposed project operations would also serve to increase SMUD's renewable energy supply and help reduce GHG emissions associated with SMUD's power generation. The project's 75 MW capacity was estimated to generate approximately 189,557 megawatt hours (MWh) per year to 196,231 MWh per year. SMUD's most recently published 2023 power content label (SMUD 2024) and reported GHG emissions intensity factor of 260 MT CO_2e per MWh were used to calculate the proposed project's net emissions benefit for an initial operational year of 2029. This calculation assumes a linear progression of SMUD's transition to 100 percent carbon-free energy by 2030, reflecting the emissions avoided by using this GHG-free energy resource compared to the same amount of energy from the current SMUD General Power Mix. The proposed project's operations would provide a benefit of approximately 16,259 MT CO_2e to 16,831 MT CO_2e avoided in the first year of operations. However, it should be noted that this calculation conservatively assumes that the power provided by the proposed project would otherwise be supplied by SMUD with a CO_2e intensity factor from a 97 percent renewable energy portfolio (inclusive of eligible renewable [biomass and biowaste, geothermal, eligible hydroelectric, solar, and wind] and large hydroelectric energy resources), which is a more aggressive incorporation of renewable energy than otherwise mandated.

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 than 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, GHG emissions generated by vehicle and equipment exhaust would also likely decrease over time due to increased regulatory requirements and improved (i.e., less emitting) technology. 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. Although the quantifiable GHG emissions offsets would diminish over time when considering the overall shift toward a 100 percent renewable energy power mix, this does not negate the overall benefit of the project. The development of renewable energy sources, such as the proposed project, are a necessity to meet the State Renewable Portfolio Standard requirements, realizing a 100 percent renewable

energy power mix, and achieving overall state GHG emissions reduction targets and SMUD's 2030 Net Zero goal.

Mitigation Measures

Although the project's operational GHG benefits would outweigh the construction-related emissions within the first year of operations through the renewable electricity generated by the project, Mitigation Measure 3.8-1 is included to reduce construction-related exhaust emissions.

Mitigation Measure 3.8-1: 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 16,831 MT CO_2e in the first year of operation, which would outweigh the project's construction GHG emissions, this impact would be **less than cumulatively considerable**. Implementation of Mitigation Measure 3.8-1, Implement Construction GHG Emission Best Management Practices during Construction Activities, would further reduce the potential impact.

Impact 3.8-2. 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 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 goals. In addition, the project would be required to comply with all current and future regulations, including California Code of Regulations Title 17 CCR Sections 95350 et seq. for reducing GHG emissions from gas-insulated equipment, such as switchgears used in solar power generation facilities like the proposed project. 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**.

3.9 Hazards and Hazardous Materials

This section summarizes the regulatory setting and describes the environmental setting and impacts related to hazards and hazardous materials. For the purposes of this analysis, the term "hazards" refers to risk associated with such risks as fires, explosions, and exposure to hazardous materials. Impacts related to hazardous emissions (i.e., toxic air contaminants) are evaluated in Section 3.3, "Air Quality," and potential effects of hazardous materials on water quality are evaluated in Section 3.10, "Hydrology and Water Quality."

3.9.1 Regulatory Setting

Federal

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 U.S. Environmental Protection Agency (EPA) 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 Code of Federal Regulations (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 (RCRA) 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 (CERCLA) 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 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.

- The Spill Prevention, Control, and Countermeasure (SPCC) rule (40 CFR Part 112) includes requirements for oil spill prevention, preparedness, and response to prevent discharges of oil to navigable waters and adjoining shorelines. The rule requires specific facilities storing 1,320 gallons of oil or more to prepare, amend, and implement SPCC plans. The SPCC rule is part of the Oil Pollution Prevention regulation, which also includes the Facility Response Plan rule.

Transport of Hazardous Materials

The U.S. Department of Transportation regulates transport of hazardous materials in commerce between states. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act, 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. The Federal Highway Administration, U.S. Coast Guard, Federal Railroad Administration, and Federal Aviation Administration (FAA) enforce hazardous materials transport regulations.

Worker Safety

The federal Occupational Safety and Health Administration (OSHA) is responsible for assuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 29 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards for handling hazardous materials and for excavation and trenching.

Emergency Planning and Community Right-to-Know Act

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services. Included under the SARA, the federal law is commonly referred to as SARA Title III. SARA Title III supports emergency planning efforts at the state and local levels and enables information sharing with local governments and the public regarding potential chemical hazards in individual communities. Under community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials exceeding certain quantities and is made available to the public. The provisions of EPCRA apply to the following major categories:

- Emergency planning
- Emergency release notification
- Reporting of hazardous chemical storage
- Inventory of toxic chemical releases

State

Senate Bill 38: Emergency Response and Emergency Action Plans for Battery Energy Storage Facilities

Senate Bill (SB) 38 amended Section 761.3 of the California Public Utilities Code to add safety requirements for battery energy storage projects. Battery energy storage systems 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 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.

Hazardous Materials Business Plan

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 Department of Toxic Substances Control

The Department of Toxic Substances Control (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 California Environmental Protection Agency (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.

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 is responsible for a portion of the information contained on the Cortese List. Other state and local government agencies, including the SWRCB and RWQCBs, are 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 any site-specific project 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 would include preparation of Phase I and [if necessary] Phase II environmental site assessment, along with site-specific remediation).

California Department of Conservation, Geologic Energy Management Division

The California Department of Conservation, Geologic Energy Management Division (CalGEM) Division of Oil, Gas, and Geothermal Resources, oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells. The regulatory program emphasizes the wise development of oil, natural gas, and geothermal resources in the state through sound engineering practices intended to protect the environment, prevent pollution, and ensure public safety.

Wildland Fire Hazard Mapping

The California Department of Forestry and Fire Protection (CAL FIRE) maintains maps of fire hazard severity zones for local and state responsibility areas. These areas are mapped based on fuels, terrain, weather, and other relevant factors. These hazard zones are rated based on their potential to expose structures to wildfire. A discussion related to wildland fire hazards is contained in EIR Section 3.20, “Wildfire.”

Transport of Hazardous Materials

The State of California has adopted U.S. Department of Transportation regulations for the movement of hazardous materials originating within and passing through the state. State regulations are contained in Division 26, Title 13 of the California Code of Regulations. The California Highway Patrol and Caltrans have primary responsibility for enforcing state regulations and responding to hazardous materials transportation emergencies. Together, these agencies determine the container types used and issue licenses to hazardous waste haulers to transport hazardous waste on public roads.

Hazardous Materials Emergency Response Plan

California has developed an emergency response plan to coordinate emergency services provided by the federal, state, and local governments and private agencies. Response to hazardous materials incidents is one part of the plan. The plan is managed by the California Governor’s Office of Emergency Services, which coordinates the responses of other agencies in the project area.

Worker Safety

The California Division of Occupational Safety and Health (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace in California. Cal/OSHA standards are typically more stringent than federal OSHA regulations. Under Cal/OSHA rules, an employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (California Code of Regulations Title 8, Sections 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and warnings regarding exposure to hazardous substances.

Local

Sacramento County 2030 General Plan

The Sacramento County General Plan of 2005–2030 (Sacramento County 2017) Hazardous Materials Element includes the following policies related to hazards and hazardous materials that apply to the proposed project.

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 Environmental Management Department

The Sacramento County Environmental Management Department serves as the local Certified Unified Program Agency (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.

3.9.2 Environmental Setting

Definition of Terms

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. The Code of Federal Regulations defines 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” (49 CFR 171.8). Section 25501 of the California Health and Safety Code defines a hazardous material as follows:

> “Hazardous material” means 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.

Known Hazardous Materials Sites

A Phase I Environmental Site Assessment (ESA) was performed by Brown and Caldwell on behalf of SMUD for this project (Brown and Caldwell 2024) for the southern portion of the project site only. Several publicly available databases maintained under Public Resources Code Section 65962.5 (i.e., the "Cortese List") were reviewed to determine whether any known hazardous materials release sites are present within the project site. The Hazardous Waste and Substances Site List (the "EnviroStor" database) is maintained by DTSC. The SWRCB maintains the GeoTracker database, an information management system for groundwater. As described in the Phase I ESA, there were no records for the project site identified during the review of the SWRCB GeoTracker database or the DTSC EnviroStor. In addition, Brown and Caldwell performed a search of the USEPA's National Priorities List (Superfund) database.

The Phase I ESA identified 14 findings associated with the project site when searching results of the standard environmental records review. However, the results are associated with the northeastern adjacent property which has the same address as the project site. However, no areas of noncompliance were identified, therefore these listings are not considered to represent recognized environmental conditions.

The Phase I ESA did not identify any recognized environmental conditions, controlled recognized environmental conditions, or historical recognized environmental conditions.

The Phase I ESA identified one de minimis condition. De minimis conditions are those situations that do not present a material risk of harm to public health or the environment, and generally would not be subject to enforcement action if brought to the attention of the regulating authority. Based the historical use of the project site and surrounding areas as agricultural land, it is possible that environmentally persistent pesticides have been applied to crops grown on or around the project site and these pesticides may still be present in soil. However, the normal use and application of agricultural chemicals generally does not trigger enforcement actions, assessments by regulatory agencies, or the recommendation for further assessment of the project site unless there is evidence which indicates that misuse, dumping or improper storage of chemicals is present or has occurred. There are no indications of these types of activities or evidence of on-site agricultural chemical mixing, large quantity storage or materials processing located on the project site or surrounding areas.

Schools

There are no K–12 schools within 0.25-mile of the project site. The closest schools to the project site are Arnold Adreani Elementary School and Sheldon High School, which are

located approximately 3.25 miles west and 4.58 miles southwest of the project site, respectively.

Airports

The runway at the publicly-owned Sacramento Mather Airport is approximately 4.7 miles north of the project site.

Mather Airport has a control tower, two asphalt/concrete runways that are approximately 11,300 and 6,100 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. (AirNav 2024).

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 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 (ESA 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.

- The entire project site is within Mather Airport's Overflight Notification Area (ESA 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 outside of the airport's 10,000-foot boundary where a wildlife hazards analysis would be required. (ESA 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 Section 3.01, "Aesthetics," of this EIR and analyzed in Impact 3.1-2.

Wildfire

Please see Section 3.20, “Wildfire,” of this EIR for a discussion of wildland fire hazards.

3.9.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The evaluation of potential impacts of the proposed project regarding hazards and hazardous materials was based on a desktop survey of the project area land uses and a Phase I ESA prepared by Brown and Caldwell (Brown and Caldwell 2024) for the southern portion of the site. The analysis also considered known hazardous materials sites listed in DTSC’s EnviroStor and SWRCB’s GeoTracker databases. The impact analysis considered the potential for changes in the nature or extent of hazardous conditions to occur as a result of project construction and operation, including increased potential for exposure to hazardous materials and hazardous conditions. Potential for hazards and hazardous conditions were reviewed in light of existing hazardous materials management plans and policies, emergency response plans, and applicable regulatory requirements.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact related to hazards and hazardous materials if it would do the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, 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, 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.

- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Issues related to wildland fire hazards are addressed in EIR Section 3.20, “Wildfire.”

Issues Not Discussed Further

Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school—Because there are no existing or proposed schools within 0.25 mile of the project site, there would be **no impact** related to schools, and this issue is not addressed further in this EIR.

Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5—As discussed above in the Regulatory Setting, the project site is not on a list of identified hazardous material sites pursuant to Government Code section 65962.5 (Cortese List). Therefore, **no impact** would occur, and this issue is not addressed further in this EIR.

Impact Analysis

Impact 3.9-1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Project-related construction activities would involve the use, temporary storage, and transport of small amounts of hazardous substances, such as batteries, 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 proposed project would not include any unusual conditions related to use, storage, or transport of minor amounts of hazardous materials such that an increased likelihood for accidental spills would occur.

Project operations would require the use of transformer oil. While the BESS storage system will contain batteries, they would be lithium iron phosphate batteries which do not contain acids. Operation of the transformers would follow applicable oil spill prevention, preparedness, and response measures in accordance with SPCC requirements. The BESS storage system would also follow the latest national fire protection safety codes, as well as applicable California Building Code and California Fire Code regulations. The codes would include fire prevention, mitigation, and suppression system requirements, and, as applicable, disposal of batteries would comply with California’s Universal Waste Rule. Pesticide/herbicide use at the project site may be required during continued agricultural uses. Occasional spraying of herbicides around the proposed buildings, inverters or transformers to control weeds may also occur. Handlers of hazardous materials such as herbicides are required by law to follow manufacturers’ use, storage, and disposal instructions printed on the label which would ensure safe applications that

would not cause a hazard to the public. As briefly described in Section 3.9.1, “Regulatory Setting,” there is an established, comprehensive framework independent of the CEQA process that is intended to reduce the risks associated with the use, transport, and disposal of hazardous materials. The use, transportation, and disposal of hazardous materials is heavily regulated at both the federal and state level; these regulations are promulgated and enforced by agencies such as USEPA, SWRCB and DTSC, and local agencies such as Sacramento County.

Furthermore, because the proposed project would disturb more than 1 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.

During operation, the proposed project would utilize a highly refined mineral oil within transformers and other components. While the oil is not toxic, secondary containment and/or diversionary structures or equipment would be integrated into the project design, as feasible, to prevent any oil discharge. After the transformers have been in operation for an extended period of time, the transformer oil would require filtering. Impurities in the filtrate would either be removed and recycled or disposed of in accordance with federal, state, and local hazardous waste disposal requirements.

Therefore, for the reasons described above, this impact would be **less than significant.**

Impact 3.9-2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction and operation of the proposed project would involve the storage, transport, and handling of hazardous materials. Construction and commissioning equipment would use small quantities of various hazardous materials (e.g., diesel fuel, oil, solvents). None of the substances used at the project site would be acutely hazardous. The potential for accidental releases of hazardous materials, primarily fuel and lubricants, could result from construction and commissioning activities including equipment fuel leaks, fuel spills, and other events. An accidental release of a hazardous material could have a significant impact on the environment, particularly to the seasonal wetlands and intermittent drainages that are present throughout the surrounding area.

As discussed in more detail in Section 3.10, “Hydrology and Water Quality,” coverage under the SWRCB’s Construction General Permit would be obtained for the project, which would require preparation and implementation of a SWPPP. The SWPPP would include best management practices, and is required by SWRCB to include measures to minimize the risk of accidental spills of hazardous materials during construction. These measures would include: proper maintenance of vehicles and equipment; refueling and equipment washing only in designated areas where a spill would not flow into drainages; and prompt cleanup and disposal at a licensed facility if any spills do occur.

Hazardous waste would be properly stored and disposed of in accordance with federal, state, and local regulations. All hazardous wastes would be transported offsite in accordance with the Department of Transportation, CFR Title 49, Subtitle B, Chapter I and CCR, Title 13, Division 2.

SMUD and its construction contractors would be required to comply with the California EPA's Unified Program (e.g., hazardous materials release response plans and inventories, California Uniform Fire Code hazardous materials management plans and inventories). The federal and state Department of Transportation (through the Hazardous Materials Transportation Act) and other regulatory agencies provide standards designed to avoid releases, including provisions regarding securing materials and container design.

Facilities that would use hazardous materials onsite would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases and protect the public health. Regulated activities would be managed by the Sacramento County Environmental Management Department, and would be required to comply with CCR Title 8, "Industrial Relations," for workplace regulations addressing hazardous materials, as well as Title 26, "Toxics." Title 26, Division 6 contains requirements for CHP enforcement of hazardous materials storage and rapid-response cleanup in the event of a leak or spill.

Compliance with State, federal, and regional/local regulations, which are presented in detail in Subsection 3.9.1, "Regulatory Setting," would reduce the risk or severity of an accident from project construction and operation. For example, federal regulations such as RCRA, CERCLA, the Clean Air Act, SARA Title III, and OSHA. In addition, State regulations enforced by CalEPA, CalOSHA, Department of Pesticide Regulation (DPR), SB 1082, and State and Local Hazard Mitigation Plans are all designed to reduce the risk of hazardous materials release from upset and accident conditions. Compliance with these regulations would reduce the potential for accidental release of hazardous materials during future construction and operation and to minimize both the frequency and the magnitude if such a release occurs. Therefore, potential impacts to workers and the environment associated with contaminated soils would be **less than significant.**

Impact 3.9-3. 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?

As discussed above, the project site is located within the Mather Airport Review Area 2, Airport Influence Area (ESA 2022). Review Area 2 is composed of airspace protection and the overflight notification areas. Land uses in Review Area 2 are not subject to land use restrictions other than the height limits established by FAA 14 CFR Part 77. The FAA's Advisory Circular 150/5200-33C provides airport operators and those parties with whom they cooperate with guidance to assess and address potentially hazardous wildlife attractants when locating new facilities and implementing certain land-use practices on or near airports.

Because the project site is approximately 4.7 miles from Mather Airport where loud aircraft would be operated, and because the project itself would generate minimal noise during operation, the proposed project would not represent a noise hazard with respect to 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.

Subpart B, Notice of Construction or Alteration, of the 14 CFR Part 77 regulations requires that the FAA be notified of any proposed construction or alteration of objects within 20,000 feet of a runway and having a height that would exceed a 100:1 imaginary surface (1 foot upward per 100 feet horizontally) beginning at the nearest point of the runway. Also requiring notification is any proposed structure or object more than 200 feet in height regardless of proximity to an airport.

The project would not include land use changes that would introduce tall buildings that would exceed FAA airspace requirements, or introduce new sources of flashing lights that could be mistaken for airport lighting, attract large concentrations of birds within approach/climb out areas, reflect light or generate electronic interference, or use or store large quantities of flammable materials. 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 Section 3.01, “Aesthetics.”

Impact 3.9-4. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

As described in Chapter 2.0, “Project Description”, all construction materials and equipment would be staged on the project site. Primary access to the project site during construction and operation would be provided from Eagles Nest and Florin roads, as shown in Exhibit 2-3 in Chapter 2.0, “Project Description”, and would provide appropriate emergency ingress and egress. In addition, the existing earthen farm roads within the project site would be improved and utilized to provide access to the solar and BESS equipment to accommodate ongoing maintenance of these facilities and to accommodate emergency vehicles, and earthen or graveled roads, approximately 12 to 20 feet wide, would be constructed throughout the site where existing farm roads cannot be utilized or new roads are needed.

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.

SMUD would be required to obtain written authorization from the Sacramento County Department of Transportation for encroachment permits. The Right of Way Management Section acts as the lead agency in the review process of these permits 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.

The project site is not situated in an area of Sacramento 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 65: Vineyard. For this evacuation zone, Florin Road, Gerber Road, Grant Line Road, and Excelsior Road are all designated routes leading east–west and north- south out of the project site (Sacramento County 2024b).

Any necessary emergency evacuations in the vicinity of the project site would be coordinated by Sacramento County officials through the Sacramento County Office of Emergency Services (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 Sacramento County officials as necessary during an evacuation to maximize throughput.

During an evacuation, Sacramento County Department of Transportation traffic engineers, along with California Department of Transportation, 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 event of an emergency, employees onsite could use the access roadways to connect to Florin Road for east-west movement. Highway 99 via Grant Line Road and Highway 50 via State Route 16 (located less than one mile north of the project site) would help meet evacuation needs from low-density residential areas and communities surrounding the project site (Sacramento County 2017).

For the reasons stated above, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and this impact would be **less than significant**.

3.10 Hydrology and Water Quality

This section provides a brief description of laws, regulations, and ordinances pertinent to hydrology and water quality in relation to the proposed project. Next, a description is provided of the existing hydrologic and hydraulic conditions of the project site, including watersheds, drainage, water quality standards and pollutants, and flooding, along with groundwater basin information related to water-bearing formations, groundwater quality, subsidence, recharge, and sustainability. The analysis describes impacts related to surface water and groundwater quality, groundwater recharge and sustainability, stormwater runoff, and flooding. Feasible mitigation measures are recommended, where necessary.

Impacts related to water supply and water treatment are discussed in Section 3.19, "Utilities and Service Systems," of this EIR.

In response to the Notice of Preparation, an adjacent resident e commented that they have concerns over the use of groundwater during project construction due to potential localized effects on the aquifer due to groundwater extraction. A water supply assessment has been prepared for this project in compliance with SB 610 and is included in Appendix HY-1 (AECOM 2025a) and the results of the study are incorporated into this analysis.

3.10.1 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act of 1972 (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.

Water Quality Criteria and Standards

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 National Pollutant Discharge Elimination System (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.

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 activity for projects that disturb between one and five acres. Phase II of the municipal permit system (i.e., known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [Small MS4s], Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipality areas of less than 100,000 persons (hereinafter called Phase II communities) to develop stormwater management programs.

California's RWQCBs are responsible for implementing the NPDES permit system (refer to additional details in the subsection "State Regulations," below).

Section 401 Water Quality Certification or Waiver

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the U.S.) must first obtain a certificate from the appropriate agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirements is delegated by the State Water Resources Control Board (SWRCB) to the nine regional boards. Water quality in Sacramento County, including the project site, is under the jurisdiction of the Central Valley RWQCB.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (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

[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.

objectives. 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 Emergency Management Agency National Flood Insurance Program

The Federal Emergency Management Agency (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 Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. Flood hazard zones in the community are identified within the FIRMs 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 annual exceedance probability (AEP) (i.e., the 100-year flood event).

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 water quality control plans (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 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 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 for the Sacramento and San Joaquin River Basins* (Central Valley RWQCB 2019) (Basin Plan) 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 (Water Code Section 13050[f]). 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 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 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. 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.

Municipal Regional Stormwater Discharge (MS4) Permit

The Cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova, Sacramento and County of Sacramento are co-permittees under the Regional Water Board approved municipal separate storm sewer system (MS4) permit (Order No. R5-2008-0142, NPDES Permit No. CAS082597). The MS4 Permit specifies the actions necessary to reduce the discharge of pollutants in stormwater to the maximum extent practicable, in a manner designed to achieve compliance with water quality standards and objectives, and methods to effectively prohibit non-stormwater discharges into municipal storm drain systems and watercourses within the permittees' jurisdictions. The MS4 Permit is implemented through County and project applicant compliance with the *Sacramento Region Stormwater Quality Design Manual* (Sacramento County et al 2018). The project site is outside of the MS4 permit boundary (Sacramento County 2022).

Sustainable Groundwater Management Act

In 2014, the California Legislature enacted a three-bill law (Assembly Bill-1739, SB-1168, and SB-1319), known as the Sustainable Groundwater Management Act (SGMA). 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. 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. 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. 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. 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 SGMA apply in a basin. In 2019, the California Department of Water Resources (DWR) completed its prioritization of the groundwater basins.

SGMA requires that local agencies form one or more groundwater sustainability agencies (GSAs) within 2 years (i.e., by June 30, 2017). Agencies located within high- or medium-priority basins must adopt groundwater sustainability plans (GSP) by January 31, 2020 or January 31, 2022.[2] The time frame for basins determined by DWR to be in a condition of "critical overdraft" is by January 31, 2020, all other high and medium priority basin have until January 31, 2022. 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.

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.

Irrigated Lands Regulatory Program

A variety of pollutants can be found in runoff from irrigated lands, such as pesticides, fertilizers, salts, pathogens, and sediment. At high enough concentrations, these pollutants can harm aquatic life or make water unusable for drinking water or agricultural uses. The Irrigated Lands Regulatory Program was initiated in 2003 to prevent agricultural runoff from impairing surface waters, and in 2012 groundwater regulations were added to the program. WDRs, which protect both surface water and groundwater, address irrigated agricultural discharges throughout the Central Valley. The Irrigated Lands Regulatory Program applies to commercial cropland that is "irrigated land"[3] (irrigated either by surface water or groundwater), and which is not covered by another separate Central Valley RWQCB order (Central Valley RWQCB 2025).

Local

Sacramento County 2030 General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2011, as updated in 2017 and 2019) includes the following policies related to hydrology and water quality that apply to the proposed project.

Agricultural Element

Policy AG-27. The County shall actively encourage groundwater recharge, water conservation, and water recycling by both agricultural and urban water users.

Policy AG-28. The County shall actively encourage conservation of soil resources.

[2] Unless the local agency has submitted an Alternative as defined in the SGMA which has been approved by DWR.
[3] Land irrigated to produce crops or pasture for commercial purposes, including lands that are planted to commercial crops that are not yet marketable (e.g., vineyards and tree crop). Irrigated lands also include nurseries, and privately and publicly managed wetlands.

Policy AG-29. The County shall minimize flood risks to agricultural lands resulting from new urban developments by:

- Requiring that such developments incorporate adequate runoff control structures; and/or
- Assisting implementing comprehensive drainage management plans to mitigate increased risks of farmland flooding resulting from such developments.

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-15. Support effective agricultural water conservation practices, including the use of recycled wastewater where financially feasible.

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.

Policy CO-33. Support an adequate and reliable Municipal and Industrial (M&I) water supply for development.

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-103. Protect the Cosumnes River Corridor by promoting the preservation of agriculture, natural habitat, and limited recreational uses adjacent to the river channel, and when feasible by acquiring appropriate lands or easements adjacent to the river.

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

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-116. Encourage filter strips using appropriate native vegetation and substrate along riparian streambanks adjacent to irrigated croplands.

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 proposed project is exempt from such permitting as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities.

Sacramento County Floodplain Management Ordinance

Sacramento County Municipal Code Title 16, Chapter 16.02, Section 16.02.060 (Ordinance SZC-2016-0023) requires a Floodplain Management Permit for any new construction, substantial improvements, or alteration of land within a special flood hazard area (FEMA Zones A, AO, Al-A30, AE, A99, AH, or AR). These standards control filling, grading, and other development which may increase flood damage; and are intended to

prevent or regulate the construction of flood barriers that would unnaturally divert flood waters or which may increase flood hazards in other areas. Per Ordinance SZC-2016-0023, Section 905-01, a project applicant must apply for a development permit for construction in a FEMA flood zone, and approval by the County's floodplain administrator is required. The permit application must include plans showing elevations of proposed structures and the elevations of areas proposed for materials and equipment storage; the proposed elevation in relation to mean sea level, of the lowest floor of all structures; the proposed elevation in relation to mean sea level to which any structure will be floodproofed; the location, volume, and depth of proposed fill and excavation within the 100-year floodplain and floodway; and a description of the extent to which any watercourse will be altered or relocated as a result of project development.

Per Ordinance SZC-2016-0023, Section 906-05, commercial solar power plants are treated as development (governed by Section 906-06), and any structures or electrical panels for such facilities must be elevated or floodproofed at least 1.5 feet above the base flood elevation, and designed and anchored in accordance with the standards of Section 906-06. A declaration of land use restriction in a format approved by County Counsel must be recorded if any part of the commercial solar development will be lower than 1.5 feet above the base flood elevation.

3.10.2 Environmental Setting

Surface Water Resources

Watersheds and Drainage

The following information is drawn from the Project Water Supply Assessment (AECOM 2025a), the Preliminary Drainage Study (AECOM 2025b), and the Aquatic Resources Delineation Report (AECOM 2024). The project region has a mild Mediterranean climate, with hot dry summers and cool wet winters. Over half of annual precipitation falls from November to February. Topography in the project site is generally flat (0 to 5 percent).

Stormwater runoff on the south portion of the site is channeled through agricultural drainage ditches, ultimately flowing into a main agricultural ditch running south-southeast and converging with another ditch running west located at the south edge of the property. This convergence is considered the outlet of the total storm water flow from the property. Outside of the property, the main ditch follows a southeast direction and connects to another ditch along Grant Line Road.

The north portion of the site includes dirt access roads and two earthen agricultural drainage ditches, one at the west side running south and the other at the south side running west. The convergence between these two ditches is considered the outlet of the total stormwater flow from the property. Outside of the property, the outlet ditch discharges to a wetland area to the south.

The project site crosses three local drainage areas: the Eder Creek, Laguna Creek, and Lower Deer Creek watersheds. Approximately 4 miles of the distribution lines are located within the Elder Creek watershed, while the remaining portion of the distribution lines, all of the northern area of the project site, and a small section of the southern area of the project site are located within the Laguna Creek watershed. The remaining portion of southern area of the project site is located within the Lower Deer Creek watershed. The Eder Creek, Laguna Creek, and Lower Deer Creek watersheds are approximately 22 square miles, 48 square miles, and 45 square miles in size, respectively.

The project site is generally flat, with an elevation of 55 to 120 feet above mean sea level. Irrigated pastures and croplands are the dominant landcover within the project site. Surrounding land uses immediately adjacent to the project site include agricultural fields and existing open space preserves with seasonal wetland, riparian, and annual grassland vegetation.

There are no streams within the northern or southern areas of the project site where the PV solar panels, BESS, substation, and associated infrastructure would be installed. However, the northern area is located just east of Frye Creek and the southern area of the project site supports three agricultural ditches, an irrigation pond, and pipelines and other irrigation infrastructure. In addition, three named streams overlap the distribution line portion of the project site – Gerber Creek, Frye Creek, and Laguna Creek. Gerber Creek is an ephemeral stream that drains to Elder Creek. Elder Creek discharges to Morrison Creek, which is tributary to the Sacramento River south of Freeport. Frye Creek, located just west of the North Area, drains to Laguna Creek, which discharges to Morrison Creek, which, as mentioned above, is tributary to the Sacramento River south of Freeport. Located south of the project site, Deer Creek drains to the Cosumnes River, which discharges to the Mokelumne River, a major eastside tributary to the Sacramento-San Joaquin Delta (AECOM 2024).

Surface Water Quality

Section 303(d) of the federal 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 RWQCB in 2019.

As stated previously, the closest streams to the project site are Gerber Creek, Frye Creek, and Laguna Creek. Gerber Creek and Frye Creek ultimately discharge to the Sacramento River, while Laguna Creek ultimately discharges to the Mokelumne River. The Basin Plan designates the following beneficial uses for these waterbodies: municipal and domestic supply, irrigation, contact and non-contact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning, wildlife habitat, and navigation. 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 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. 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 3.10-1 lists impaired water bodies in the project region included in the SWRCB's 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, Gerber Creek).

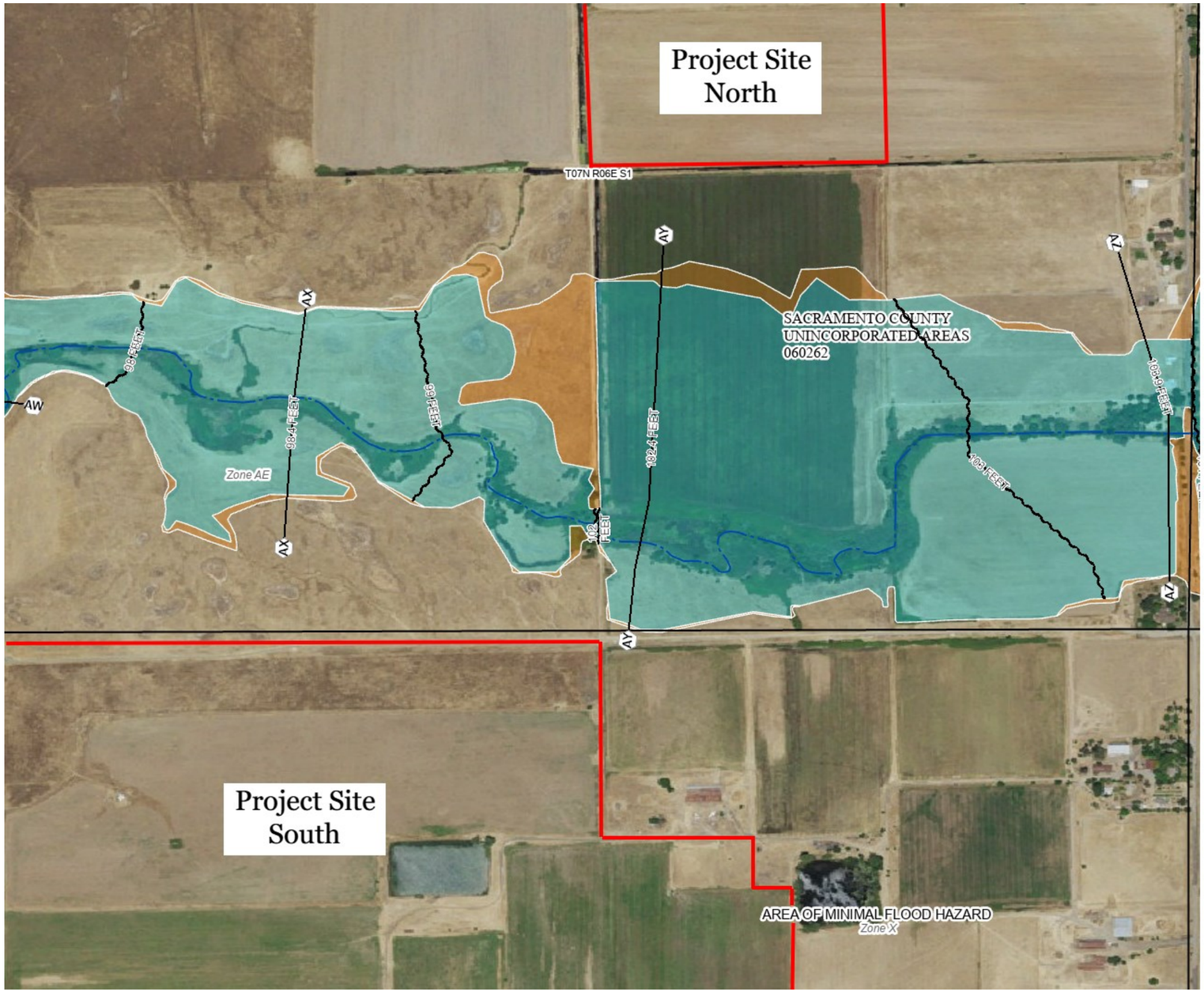
Table 3.10-1. Section 303(d) List of Impaired Water Bodies

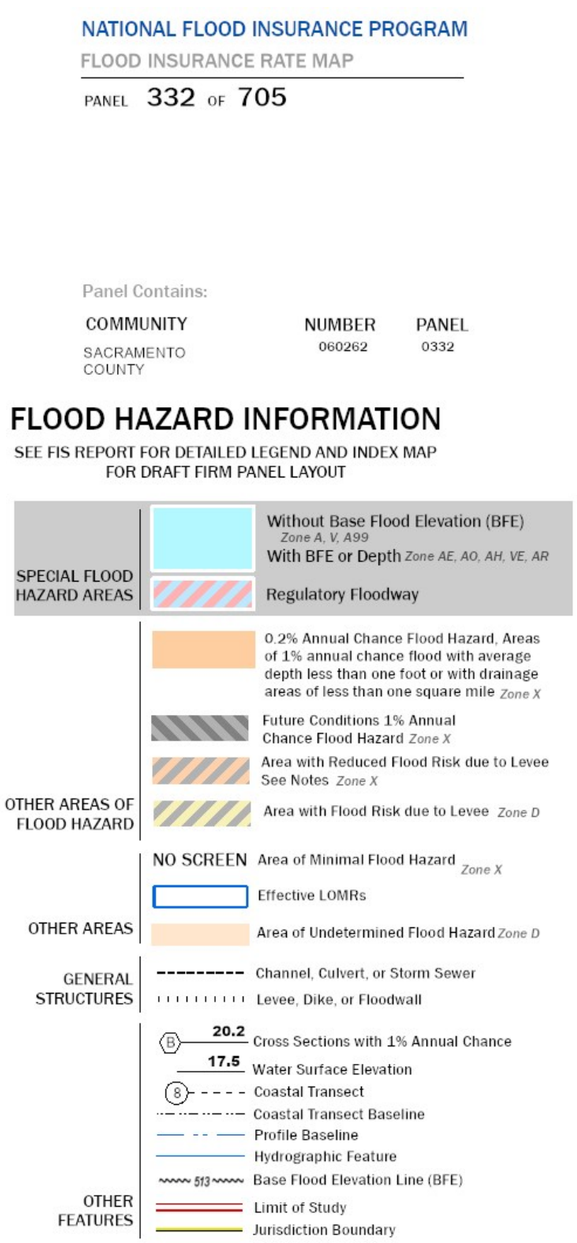
Impaired Water Body	Pollutant	Pollutant Source	TMDL Status
Elder Creek	Pyrethroid Pesticides	Unknown	Approved 4/22/2019
Morrison Creek	Pyrethroid Pesticides	Unknown	Approved 4/22/2019
Laguna Creek	Indicator Bacteria	Escherichia coli (E. coli)	Expected completion in 2027
Laguna Creek	Toxicity	Unknown	Expected completion in 2029
Mokelumne River	Mercury	Unknown	Approved 10/20/2011

Notes: TMDL = total maximum daily load
Source: SWRCB 2021

Flooding

Both the northern and southern portions of the project site are mapped as FEMA Zone X – Area of Minimal Flood Hazard. However, much of the area surrounding Laguna Creek, which lies between the north and south portions of the project site, is mapped as Zone AE, which is a high-risk area with a one percent annual chance flood hazard. This type of flood risk is also characterized as a "100-year floodplain." The floodplain mapping for the project area is shown in Exhibit 3.10-1 below.





Sources: FEMA 2025

Exhibit 3.10-1. FEMA Floodplain Mapping

Tsunamis

A tsunami is an ocean wave usually created by undersea fault movement or by a coastal or submerged landslide. As the displaced water moves to regain equilibrium, waves are formed and radiate across the open water. When the waveform reaches the coastline, it quickly raises the water level, with accompanying high water velocities that can damage structures and sweep away objects and people. The project site is along the eastern margin of the Sacramento Valley, approximately 82 miles from the Pacific Ocean. Therefore, there is no tsunami risk to the project.

Seiches

A seismic seiche causes standing waves to set up on rivers, reservoirs, ponds, and lakes when seismic waves from an earthquake pass through the area. Because they occur in an enclosed waterbody, standing waves continue to slosh back and forth over a period of time that may range from a few minutes to several hours. There are no nearby waterbodies with risk of seiches. Therefore, there is no seiche risk to the project.

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. Preliminary geotechnical data indicates that the upper 15 feet of soils underlying the project site consist of clay/silt. The Natural Resources Conservation Service (NRCS) classifies the hydraulic Soil Group for this location as C. Soils group C have low infiltration rates when thoroughly wetted and have water transmission rates between 0.05 to 0.15 inch per hour (AECOM 2025b). Site-specific infiltration characteristics and stormwater runoff potential were modeled as part of a Preliminary Drainage Study performed by AECOM (2025b) (Appendix HY-2), the results of which are summarized in Impacts 3.10-3 and 3.10-4.

Groundwater Resources

Groundwater Basin

The project site is within the Sacramento Valley – South American Subbasin (South American Subbasin), Basin Code 5-021.65, which is one of sixteen subbasins that comprise the Sacramento Valley Groundwater Basin. This subbasin is located within Sacramento County and is bounded by the American River to the north, the Sacramento River to the west, the Cosumnes and Mokelumne Rivers to the south, and the Sierra foothills to the east. The South American Subbasin encompasses approximately 388 square miles (248,000 acres) of area.

A GSP for the South American Subbasin was prepared in 2021 (Larry Walker and Associates 2021); relevant information from the GSP is presented in the subsections below.

Groundwater Recharge

Under natural conditions, groundwater recharge results from infiltration of precipitation (rain and snow). The rate and quantity of water reaching the aquifer depends on factors that include the amount and duration of precipitation, soil type, vertical permeability, clay content, slope, land cover, and the presence of a cemented hardpan or bedrock.

As discussed above, most of the project site is composed of Hydrologic Group C soils. The conditions underlying the project site severely restrict downward movement of water. According to the GSP, the majority of recharge occurs in areas where soils are coarse (e.g., southwest of Folsom) and where there is extensive application of agricultural applied water (e.g., south of Elk Grove and between Grant Line Road and the Cosumnes River).

Groundwater Levels

Groundwater levels in the western portion of the South American Subbasin have been generally increasing since the 1980s despite a turn towards drier conditions and increasing population. This increase in groundwater levels has been largely attributed to a combination of conjunctive use projects (i.e., the combined use of groundwater and surface water sources), construction of the Freeport diversion facility and Vineyard surface water treatment plant, urban conservation plans, and changes in use of previous agricultural land.

Groundwater levels in some areas of the eastern portions of the South American Subbasin show decreases in groundwater levels despite the lack of significant changes in land or water use. The cause of this decline is not well understood but may be attributed to the combination of remediation activities at the Inactive Rancho Cordova Test Site, Aerojet Superfund Site, and Kiefer Landfill and the aquifer becoming thin and low yielding in this area (AECOM 2025a).

Subsidence

Little to no land subsidence has been observed in the South American Subbasin (i.e., the lowering of the ground surface elevation). Elevation change generally ranges from 0 to -0.14 foot from 2005 to 2020 (Larry Walker and Associates 2021).

Groundwater Quality

The GSP provides generalized water quality data obtained from wells throughout the South American Subbasin. Generally, the groundwater in the South American Subbasin is of good quality and meets local needs for municipal, domestic, and agricultural uses (Larry Walker and Associates 2021). Exceedances of constituents may be caused by localized conditions and generally are not reflective of regionally poor groundwater quality.

Sustainability

The Sustainable Groundwater Management Act (SGMA) and corresponding regulations require that each groundwater basin designated as a "high" or "medium" priority be operated to a sustainable yield, balancing natural and artificial groundwater recharge with groundwater use to ensure that 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. California's 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). Groundwater agencies located within high- or medium-priority basins must adopt GSPs by January 31, 2020 (if the basin was determined by DWR to be a condition of critical overdraft), or by January 31, 2022, for all other high and medium priority basins. GSPs may be adopted, but are not required, for low and very low priority basins.

The South American Subbasin is considered high priority under SGMA. According to the WSA completed for this project, there are currently adequate supplies to support the project even in the context of normal, single dry, and multiple dry water years (AECOM 2025a). Projections of future conditions with or without climate change indicate that the groundwater subbasin is in slight imbalance. As per the groundwater sustainability plan, planned projects and management actions will be implemented to avoid undesirable results over the 20-year to 50-years planning horizon of the groundwater sustainability plan. As such, there would be sufficient supplies to serve the increased project demand (a minor increase of 1 AFY) over the next 35 years (AECOM 2025a).

3.10.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

Potential impacts related to hydrology and water quality were evaluated based on a review of (1) available information regarding watersheds, surface waters, groundwater, flooding hazards, and stormwater control and treatment requirements in the project area; (2) the *Water Supply Assessment* (AECOM 2025a); (3) the *Preliminary Drainage Study* (AECOM 2025b); and (4) the *Aquatic Resources Delineation Report* (AECOM 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.

Thresholds of Significance

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 off site;

  iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

  iv) impede or redirect flood flows;

- 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.

Impact Analysis

Impact 3.10-1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Proposed Solar Facilities

For the proposed project, approximately 400 acres of existing agricultural land would be used for new solar facilities and would continue to support agricultural land uses onsite below and between the solar panels.

As stated above in the “Environmental Setting” Section, Laguna Creek, which flows through between the north and south portions of the project site, is included on the SWRCB’s 303(d) list of impaired water bodies for unknown toxicity and Escherichia coli (E. coli). Additionally, Elder Creek and Morrison Creek, which are tributaries of nearby waterbodies, are included on the 303(d) list for pyrethroids. Additionally, there are multiple surface water drainage features on the project site, some of which have been determined to be jurisdictional wetland features (AECOM 2024).

Buildout of the project site could affect long-term water quality by adding up to 4.1 acres of new impervious surfaces associated with the BESS and substation foundations and

compacted crushed gravel. of the total approximately 400-acre project site, which has the potential to slightly increase the pollutant load in stormwater runoff. Other elements of the project such as existing agricultural roads, which would be improved with gravel overlay, and new onsite earthen or graveled roads. Thus, the overall conversion to new impervious surfaces that would prevent groundwater infiltration is minimal.

New development has the potential to alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Changes to a more developed state, if not properly managed, can adversely affect water quality. Sediment, trash, organic contaminants, nutrients, trace metals, and oil and grease compounds are common urban runoff pollutants that can affect receiving water quality. Sources of these pollutants may be erosion from disturbed areas, deposition of atmospheric particles derived from automobiles or industrial sources, corrosion or decay of building materials, rainfall contact with toxic substances, and accidental spills of toxic materials on surfaces that receive rainfall and generate runoff. Specifically, sources of sediment from urban development include roads and parking lots, as well as destabilized landscape areas, streambanks, unprotected slopes, and disturbed areas where vegetation has been removed during the grading process. Sediments, in addition to being pollutants in their own right, transport other contaminants, such as trace metals, nutrients, and hydrocarbons that adhere to suspended sediment particles. New urban industrial and commercial development can generate urban runoff from parking areas, as well as any areas of hazardous materials storage exposed to rainfall.

The amount of contaminants discharged in stormwater drainage from developed areas varies based on a variety of factors, including the intensity of urban uses such as vehicle traffic, types of activities occurring (e.g., office, commercial, industrial), types of contaminants used at a given location (e.g., pesticides, herbicides, cleaning agents, petroleum byproducts), contaminants deposited on hardened surfaces, and the amount of rainfall. Water quality degradation can interfere with Basin Plan implementation and with achievement of TMDL objectives required by the CWA, and can adversely affect wetland ecosystems, and sensitive plant and animal species as well as humans.

Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would slightly increase with the buildout of the proposed project site, compared to existing conditions. The major factor in this increase is the added amount of impervious surfaces, in the form of concrete foundations for the substation and BESS and compacted crushed gravel. In addition, the transformers would use oil which could result in discharges in case of improper storage, application, and/or disposal. New impervious surfaces associated with the BESS and substation have the potential to result in an associated increase in stormwater runoff, which can be a source of surface water pollution.

However, SMUD’s would require the construction contractor to prepare a SWPPP and implement all associated BMPs during construction. In addition, SMUD would require the site operator to implement BMPs during operation and maintenance which in turn would

reduce or avoid impacts related to long-term erosion, sedimentation, and water quality degradation.

As described above in the “Regulatory Setting” section, although the project is exempt from the County’s Grading, Erosion, and Sediment Control Ordinance, SMUD would require its contractor(s) to implement 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 through percolation of stormwater. Earthmoving activities that could encounter groundwater are issued permits by the Central Valley RWQCB through the project-specific permitting process; the permits contain provisions (in form of permit terms and conditions) that are specifically intended to protect groundwater quality. Groundwater quality would also be protected through maintenance of well heads to ensure that overland surface water does not enter the groundwater table through the tops of the wells.

Once construction is complete, the project site would be seeded with grass underneath and between the solar panels. As described in Chapter 2, “Project Description”, grading and vegetation removal is proposed along the access roads, at the location of the inverters and transformers, at the BESS yard, and the generation substation. Aside from these areas, vegetation removal and site clearing would not generally occur where solar panels would be installed. Grading would be minimized to the extent feasible within the solar array areas and would be consistent with the setback requirements. Within the solar array area, limited and localized grading may be used to prepare the site for post and PV modules installation, construct inverter foundations, and to enhance or construct new access roads. Grading would likely be required for the proposed BESS yard and substation. Post-development water quality treatment would be accomplished via filtering through the vegetated areas for overland surface flow applied during irrigating the pasture under the panels. During the construction phase, various temporary BMPs such as stabilized construction entrances, silt fences, straw bales, etc. would be implemented along the perimeter of the parcels to prevent pollutants from leaving the site. Most of the proposed equipment associated with project operation would not represent a source of pollutants. However, the main power transformers within the substation and the medium-voltage transformers located within the solar PV and BESS area may contain oil. An oil containment structure would be constructed around each of the main power transformers within the substation area to contain any potential oil leaks, in case such leaks occur. The final design of water quality treatment measures would include BMPs consistent with the California Stormwater Quality Association’s (CASQA) *Industrial/Commercial BMP Handbook* (CASQA 2021).

Projects that disturb more than 1 acre of land 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])) [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 Plan includes a numeric, two-part, risk-based analysis process.

As part of the proposed project, SMUD would repair a narrow dirt road along the southern boundary of the project site, which crosses a channel supporting freshwater marsh habitat. The existing road surface would be repaired with dirt and gravel and would be widened from its current width (approximately 7 feet) to a total width of approximately 12 feet. The roadway widening may require the replacement or expansion of the existing culvert to accommodate the wider road and construction of concrete headwalls or installing stone-filled gabions to stabilize the upstream and downstream slopes around the culvert. If needed, the other existing onsite culverts may also need to be cleared or replaced during construction to maintain or restore optimal flows. If the proposed project discharges waste into a water of the State (e.g., this channel that supports freshwater marsh habitat), the proposed project would also be required to comply with the WDRs under the Porter-Cologne Water Quality Control. Through the WDR process, the State Water Resources Control Board would 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 and that any impacts to waters of the state and wetlands are mitigated on a no net loss basis. SMUD will obtain a WDR permit, as required based on ultimate design of the road improvements.

In conclusion, compliance with the above-listed laws, regulations, ordinances, and permit terms would require the project to reduce pollution and runoff generated in the proposed project site through implementation of operation-related source-control measures, along with BMPs, and pretreatment and with preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants. These measures would protect water quality as required by the Basin Plan. Therefore, construction and operation of the proposed development at the project site would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact would be **less than significant**.

Ongoing Agricultural Operations

The project site has been and is currently used for agricultural production. Post-construction, the majority of the site would continue to be used for agricultural activities through continued irrigation of the pastures within the project site for grazing and possible crop production and the potential installation of pollinator friendly vegetation. Vegetation would be grown under and between the PV modules to provide forage for sheep to graze. The grazing lands would be irrigated using the existing flood irrigation system which is being preserved and incorporated into project design. Grazing is an existing use onsite and once construction has been completed; grazing would occur onsite around the PV arrays during project operations.

SMUD would require the site operator to implement BMPs during operation and maintenance, (such as panel washing and grazing). It is estimated that solar panels would be washed once per year for approximately three weeks (i.e., 15 days) in case of excessive soiling. Panel washing is estimated to use 1 acre-foot per year of water. This volume of water would be negligible compared on ongoing agricultural uses onsite (estimated to be 775 acre-feet per year) and would not substantially impact drainage patterns onsite. Therefore, this impact would be **less than significant**.

Impact 3.10-2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Groundwater Recharge

Impervious surfaces, such as BESS and substation foundations, and heavily traveled dirt and gravel roads where the soil becomes compacted, will restrict the movement of surface water through the soil in the top layers directly underneath such facilities. Therefore, a large enough area of new impervious surfaces associated with development can interfere with groundwater recharge.

Internal access roadways throughout the project site would be composed of gravel wherever feasible. Depending on the amount of use, gravel roads can become compacted and result in a slight loss of permeability.

However, most of the approximately 400-acre project site would consist of the proposed solar arrays. The proposed PV arrays would be mounted on posts above the ground, and therefore would not impede the movement of water through the soil, and therefore would have no effect on groundwater recharge. Project components that would result in the development of most of the impermeable surface at the project site consist of the substation, BESS.

The approximately 4.1 acres of new impervious surfaces associated with the BESS and substation represent approximately 1 percent of the total proposed project site, and thus would not substantially interfere with groundwater recharge. Therefore, the proposed project would not impede sustainable groundwater management of the basin by substantially interfering with groundwater recharge, and this impact would be **less than significant.**

Groundwater Supplies

A *Water Supply Assessment* (WSA) has been prepared for the proposed project as required by SB 610 and is included in Appendix HY-1 (AECOM 2025a). The WSA evaluated potential impacts from groundwater use for the proposed project. The results of the WSA, as related to groundwater basin sustainability, are summarized below.

Groundwater is currently pumped from onsite and local wells that are owned by the landowners to meet agricultural demands within the project site. For construction and operations, the project would utilize two existing onsite groundwater wells (Well 2730064 and Well 2628266), which are both located within the southern area of the project site and one local well (Well 2627257), which is located approximately 0.25 miles east of the northern area of the project site (Appendix HY-1, Water Supply Assessment). These are the same wells used for agricultural production. Existing agricultural land uses within the project area include irrigated crops and pasture for grazing. Crops have included sudan grass for seed, corn for grain, summer and winter hay, and triticale grain. Approximately 385 acres of cropland (e.g., corn or sudan) and 103 acres of pasture are located within the northern and southern portions of the project site.

There are multiple agricultural wells currently in use within the project site and vicinity. In addition to those wells, there are other wells within the project vicinity associated with residential use, irrigation, or groundwater observations which have reported data to DWR in the past. Many of these wells have not reported use to DWR in several decades. However, use of water from these wells is outside of the scope of this project.

During construction, two onsite wells are expected to be used during development of the southern area of the project site (Well 2730064 and Well 2628266) and one local well is expected to be used during development of the northern area of the project site (Well 2627257). These wells would also be used during the operations and maintenance phase of the project. These wells would be used to support PV panel washing and continue to be used for the onsite agricultural activities. For the purpose of this analysis, it is assumed that current agricultural practices would be unaffected by solar facility operations. The projected water demand and well drawdown are shown in Table 3.10-2 below.

Table 3.10-2. Water Demand from Onsite and Local Wells

Project Phase	Water Demand	Primary Use
Construction	15 AF over 18 to 24 months	Soil compaction and dust control
O&M of Solar Facilities	1 AFY	Washing of solar panels
Continued Agricultral Use	775 AFY	Ongoing agricultural activities

AF = acre-feet; AFY = acre-feet per year; O&M = operation and maintenance

As shown in Table 3.10-1, implementation of the proposed project would require up to 15 AF of groundwater over an 18- to 24-month period which could occur during normal, single dry, and even multiple dry water years. Approximately 1 AFY would also be needed during a longer 35-year time period. As described in the project-specific WSA, these supplies are currently available within the groundwater basin and can be accounted for under projected conditions with the planned projects and potential management actions under consideration. Implementation of the proposed project would not conflict with the sustainable groundwater management plan of the subbasin (AECOM 2025a). Therefore, the impact to groundwater supplies would be **less than significant**.

Impact 3.10-3. Substantially Alter Drainage Patterns or Add Impervious Surfaces that would Result in Substantial Erosion, Exceed Storm Drainage System Capacity, or Provide Substantial Additional Sources of Polluted Runoff?

The project would result in the addition of up to approximately 4.1 acres of new impervious surface throughout the approximately 400-acre site, which represents approximately 1 percent of the total site area.

The project design intends to co-locate solar panels with agriculture, maintaining the current agricultural use. Within the northern and southern areas of the project site, solar panels would be distributed in distinct power blocks mounted on galvanized steel posts driven into the ground, which would minimize the need for shallow foundations. Consequently, this would only slightly increase the amount of impervious area over baseline conditions (AECOM 2025b).

The existing farm roads within the project site would be combined with new gravel roads to interconnect each power block and provide access to the proposed inverters. The new gravel roads would have lateral ditches to convey the water reducing the uncontrolled runoff. The most significant new impervious area onsite would include the substation and the BESS.

Peak discharges for existing conditions and the proposed (post-project) conditions were modeled in the 2025 Preliminary Drainage Report using the HEC-HMS software package developed by the U.S. Army Corps of Engineers (AECOM 2025b). The results of that analysis are provided in Table 3.10-3 through Table 3.10-6, below.

Table 3.10-3, below, indicates that for each design storm event, the proposed condition peak discharge and the stormwater runoff volume at the stormwater outlet at the southern area of the project site are slightly lower than the corresponding stormwater volume and peak discharge for the existing condition, an improved stormwater condition in post-development is achieved.

Table 3.10-3. Stormwater Quantity Results for the Southern Area of the Project Site

Storm Events	Existing Conditions Peak Discharge (cfs)	Proposed Conditions Peak Discharge (cfs)	Difference Peak Discharge (cfs)
2-year, 24-hours	40.0	35.9	-4.1
10-year, 24-hours	70.0	66.5	-3.5
100-year, 24 hours	124.1	121.4	-2.7
Storm Events	**Existing Conditions Volume (acre-ft)**	**Proposed Conditions Volume (acre-ft)**	**Difference Volume (acre-ft)**
2-year, 24-hours	43.7	39.6	-4.1
10-year, 24-hours	79.8	75.6	-4.2
100-year, 24 hours	142.0	138.0	-4.0

Source: AECOM 2025b
cfs = cubic feet per second

Table 3.10-4, below, indicates that for each design storm event, the proposed condition peak discharge and the stormwater runoff volume for the north project site are slightly higher than the corresponding peak discharge and stormwater volume for the existing condition.

Table 3.10-4. Stormwater Quantity Results for the Northern Area of the Project Site

Storm Events	Existing Conditions Peak Discharge (cfs)	Proposed Conditions Peak Discharge (cfs)	Difference Peak Discharge (cfs)
2-year, 24-hours	7.5	7.6	0.1
10-year, 24-hours	13.1	13.2	0.1
100-year, 24 hours	23.0	23.1	0.1
Storm Events	**Existing Conditions Volume (acre-ft)**	**Proposed Conditions Volume (acre-ft)**	**Difference Volume (acre-ft)**
2-year, 24-hours	7.9	8.0	0.1
10-year, 24-hours	14.3	14.4	0.1
100-year, 24 hours	25.2	25.3	0.2

Source: AECOM 2025b
cfs = cubic feet per second

Table 3.10-5, below, indicates that for each design storm event, at the area where the substation and the BESS are located, post-developed condition peak discharge and stormwater runoff volume are slightly higher than the corresponding peak discharge and stormwater volume for the existing condition.

Table 3.10-5. Stormwater Quantity Results for the Substation and BESS Area

Storm Events	Existing Conditions Peak Discharge (cfs)	Proposed Conditions Peak Discharge (cfs)	Difference Peak Discharge (cfs)
2-year, 24-hours	1.3	2.1	0.8
10-year, 24-hours	2.2	3.1	0.9
100-year, 24 hours	3.9	4.8	0.9
Storm Events	**Existing Conditions Volume (acre-ft)**	**Proposed Conditions Volume (acre-ft)**	**Difference Volume (acre-ft)**
2-year, 24-hours	1.2	2.3	1.1
10-year, 24-hours	2.4	3.6	1.2
100-year, 24 hours	3.8	5.6	1.8

Source: AECOM 2025b
acre-ft = foot per acres
BESS = battery energy storage system
cfs = cubic feet per second

Table 3.10-6, below, shows that for each design storm event, the total runoff volumes with the project would be lower than the corresponding volumes for the pre-developed condition, meaning that the project would not adversely impact water bodies receiving the generated flows downstream the limits of the project site.

Table 3.10-6. Stormwater Volume Variation for the Project

Storm Events	Existing Conditions Volume (acre-ft)	Proposed Conditions Volume (acre-ft)
2-year, 24-hours	51.6	47.6
10-year, 24-hours	94.1	90.0
100-year, 24 hours	167.2	163.4

Source: AECOM 2025b
acre-ft = foot per acres

The analysis above indicates that the project would have minimal adverse effects on the existing drainage areas, runoff patterns, and peak flow rates both on-site and off-site. The addition of impervious areas would only marginally increase runoff on certain places. The analysis also indicates that total runoff would be lower with the project than with existing conditions (AECOM 2025b). Therefore, the impact would be **less than significant**.

Impact Conclusion

During project construction, the project would be required to comply with the BMPs associated with the required SWPPP, along with operational stormwater quality, would result in **less than significant** impacts from erosion or creation of substantial new sources of operational polluted stormwater runoff.

The discussion above demonstrates that during project operation, stormwater runoff peak flows and volumes in the PV array areas would be reduced from existing conditions, without the need for detention basins (AECOM 2025b). During the project's operational phase, occasional washing of solar panels (approximately once per year) would occur using water. Because the amount of stormwater runoff would be reduced as compared to existing conditions (as concluded in the Preliminary Drainage Study), proposed development in the PV array area would not result in substantial erosion or exceed the storm drainage system capacity. Furthermore, operation of the PV arrays, involving yearly panel washing, would not provide substantial additional sources of polluted runoff.

Therefore, operation of the substation and BESS areas would not provide substantial additional sources of polluted runoff.

For the reasons stated above, operational impacts related to substantial erosion, additional sources of polluted runoff, and exceedance of stormwater drainage capacity throughout the project site would be **less than significant.**

Impact 3.10-4. Substantially Alter Drainage Patterns or Add Impervious Surfaces that would Result in Increased Flooding, or Impede or Redirect Flood Flows?

As discussed in the "Environmental Setting" Section above and shown in Exhibit 3.10-1, FEMA has mapped the area surrounding Laguna Creek as a 100-Year Floodplain and has identified cross-sections at selected points along the streambed with anticipated base flood elevations (i.e., the water surface elevation) during a flood event. While the area surrounding Laguna Creek is at risk of flooding, the primary project components (i.e., PV

arrays, BESS, and substation), would be constructed within areas mapped as Zone X for minimal flood risk. Approximately 8 or 9 of the proposed distribution line poles may be sited within the 100-Year Floodplain. However, the number of these poles would be limited, and the aggregate footprint would be too small to affect local flooding. Additionally, the project would result in the addition of up to approximately 4.1 acres of new impervious surface throughout the approximately 400-acre project site. However, the installation of these components would not add a substantial amount of impervious surface that would result in increased flooding, or impede or redirect flood flows. Therefore, the impact would be **less than significant.**

Impact 3.10-5. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

As explained previously in the "Environmental Setting" section above, the project site is not located in a tsunami or seiche zone; thus, there would be **no impact** from release of pollutants from either of these hazards.

The proposed PV arrays, BESS, and substation would not be developed within the 100-Year Floodplain surrounding Laguna Creek. However, individual poles for the proposed distribution lines may be installed and/or replaced within the 100-Year Floodplain. This project component would not result in a risk of pollutants from inundation, because the powerlines would be mounted on overhead poles which would be anchored below ground to ensure stability.

The location of the construction trailer and the construction material and equipment storage and staging areas has not yet been determined. However, staging areas would be located outside of the 100-year floodplain preventing inundation of construction equipment or material storage areas during a flood that could result in downstream transport of pollutants, thereby degrading water quality and impairing designated beneficial uses of downstream waterbodies. This impact is **less than significant.**

Impact 3.10-6. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

For the reasons described in Impacts 3.10-1 and 3.10-2, above, the proposed project would not conflict with or obstruct implementation of the *Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins* (Central Valley RWQCB 2019) or the *South American Subbasin Groundwater Sustainability Plan* (Larry Walker and Associates 2021). Therefore, this impact would be **less than significant**.

3.11 Land Use and Planning

This section describes the existing land use and setting of the proposed project site and surrounding area and evaluates whether the proposed project would result in a physical division of an established community or adverse effects to land use and planning. This section further describes the proposed project's consistency with state, regional, and local plans that are not already addressed in the other resource sections of this Draft EIR.

3.11.1 Regulatory Setting

Federal

There are no relevant federal regulations regarding land use and planning applicable to the proposed project.

State

There are no relevant state regulations regarding land use and planning applicable to the proposed project.

Local

Sacramento County 2030 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 extent and location of lands planned for urban uses and those planned to remain in a rural or natural setting.

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

Public Facilities Element

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

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

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

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

Urban Services Boundary and Urban Policy Area

The project site is located inside of the County's current Urban Services Boundary (USB); however, the project site is mostly outside of the County's Urban Policy Area (UPA), with the exception of a portion of the distribution line alignment (Sacramento County 2021).[1] The UPA and the USB are designed to promote maximum efficiency of land uses and

[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.

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 potentially includes portions of Assessor's Parcel Numbers (APNs) 067-0110-083, 123-0030-003, and 123-0040-001. These APNs are designated as General Agricultural (20 acres) by the Sacramento County General Plan (Sacramento County 2020). This designation identifies land that is generally suitable for agricultural production with the specific intent to provide an opportunity for starter farms or large hobby farms. Much of the land in this category is classified as "statewide in significance", with soils generally in the class III and IV range. Approximately 30 percent of the land in this category is primarily suitable for grazing. Uses other than agricultural production are not permitted. Other uses, such as the proposed project, would typically be permitted with the approval of a Use Permit. However, as discussed in Section 3.02, "Agricultural Resources", the proposed project is exempt from such permitting as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities (Sacramento County 2024a).

These APNs are also associated with the County's Resource Conservation Areas designation. The purpose of the Resource Conservation Area combining designation is to identify areas with special resource management needs. The designation illustrates certain natural resources as being important on the Land Use Diagram while recognizing the validity of the underlying land use designation. The intent is to develop programs and incentives to assist landowners with resource protection and enhancement. Compliance with the Resource Conservation designation relies on the voluntary support of landowners who seek cooperative conservation agreements with the County. Designated natural resource conservation areas may be somewhat generalized, and target resources may not exist on all property within the delineated area. Resource Conservation areas address vernal pools, wetland creation, waterfowl management, peat soil conservation, and Blue Oak woodland harvesting.

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 discussed in Chapter 2, “Project Description”, the project site is currently zoned Agriculture 160 (AG-160) by the Sacramento County Zoning Ordinance, meaning a 160-acre minimum parcel size is required to qualify for this zoning. The AG-160 zoning designation is intended to eliminate encroachment of incompatible land uses with 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 to the residents of the County; and encourage the retention of sufficiently large agricultural lots to assure maintenance of viable agricultural units in the future (Sacramento County 2024b).

Permitted uses within the AG-160 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 2024b). 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 2024b).

The proposed project would be categorized as Commercial II Solar Energy Facilities by the Sacramento County Zoning Code and approval of a County Use Permit would typically be required for this use within the AG-160 zoning designation. However as mentioned above under “Land Use Designations”, the proposed project is exempt from such permitting as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities (Sacramento County 2024a).

3.11.2 Environmental Setting

The proposed project would be located on approximately 400 acres within 534 acres of land studied in unincorporated southeastern Sacramento County, south of the City of Rancho Cordova and north of Wilton (see Exhibit 2-1 in Chapter 2, “Project Description”). The project would be bound to the north by Florin Road and to the east by Eagles Nest Road. Primary access to the project site would be provided by entry roads from Eagles Nest and Florin roads.

The land underlying the site is subject to Williamson Act contracts 69-AP-023.2, 69-AP-023.6, and 69-AP-023.5. The Williamson Act contracts cover the entire legal parcels and therefore include more land area than required for the proposed project. Currently, the Williamson Act contracts for these parcels do not include solar PV facilities as a compatible use. As such, the property owners intend to amend their contracts to allow for solar PV facilities and battery energy storage in conjunction with agricultural activities.

The proposed overhead distribution line route would encompass up to 3.5 miles of new overhead distribution lines and reconductoring of up to 4 miles of existing lines outside of the 400 acres of land on which the proposed solar panels and associated infrastructure would be located. The total area associated with the proposed overhead distribution lines includes up to 108 acres, assuming the overhead easements are 25 feet wide on either side of the distribution lines.

Existing Land Uses

The project site's current (and historic) use is agricultural production. The majority of the project site has been used for irrigated crops and irrigated pasture for grazing. Crops have included sudan grass for seed, corn for grain, summer and winter hay, and triticale grain. The irrigated pasture has an average carrying capacity of seven ewes/lambs per acre. The southern half of the project site includes, in its northern extent, an area used for dryland grazing which includes a 19-acre vernal pool area. No project-related facilities would be located in this vernal pool area. Additionally, an existing underground irrigation system along the farm roads within the project site is used to flood irrigate pasture and crops. The project would be designed to preserve the existing irrigation system to ensure that it remains functional to irrigate the site during project operations.

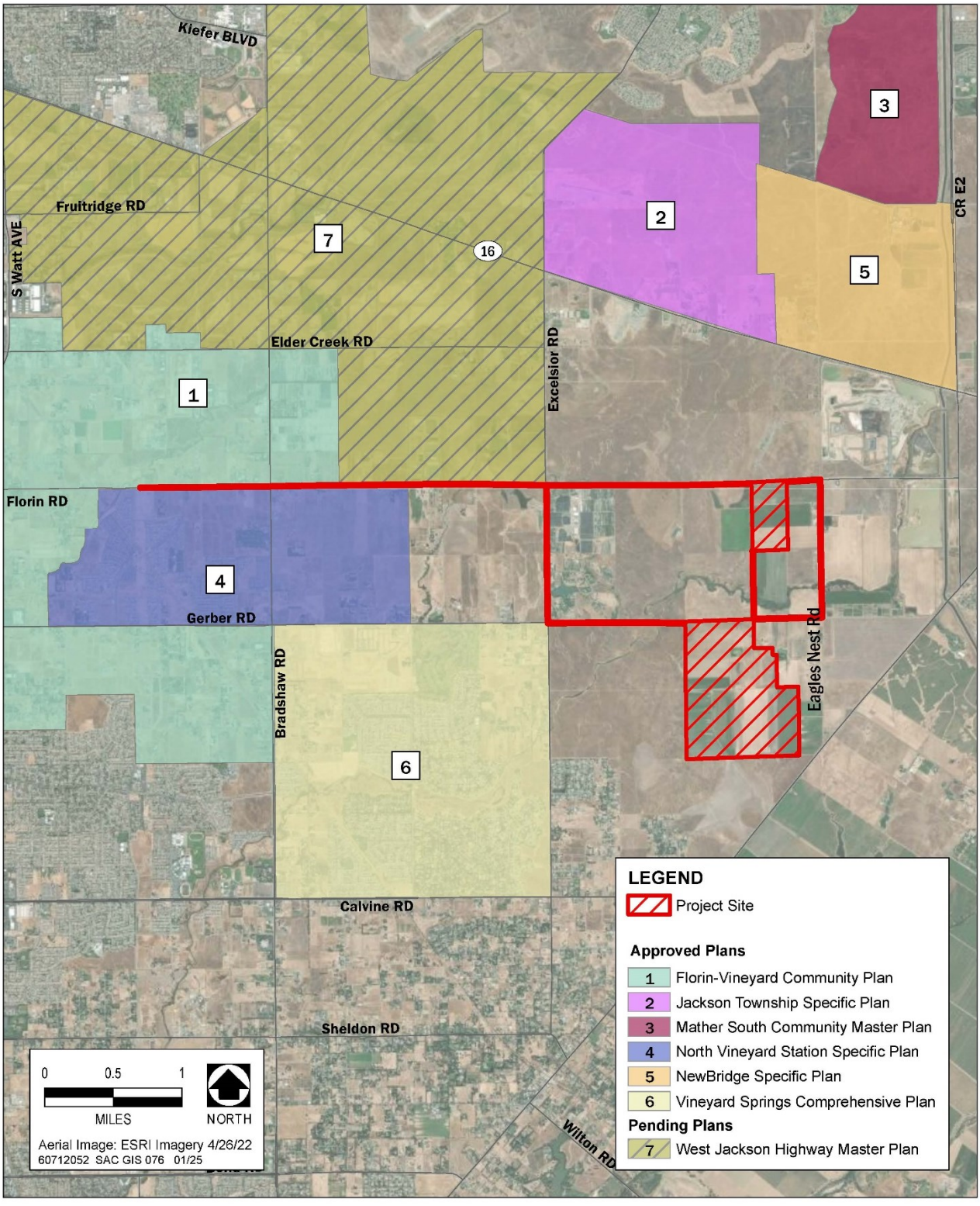
Surrounding Land Uses

Surrounding land uses immediately adjacent to the project site include agricultural fields and existing open space preserves with seasonal wetland, riparian, and annual grassland vegetation. Along Florin Road to the east of the site, there is an industrial business complex that contains two building materials suppliers, Triangle Rock Products and Vulcan Materials Company, an agricultural wholesaler, Lopez AG Services, and Sacramento Compost. To the west of the project site along Florin Road, there is a wholesale plant nursery. Approximately 0.5 mile to the west, east, and southwest of the project site there are low-density residential developments (Birch Ranches, Gorman Acres, Sheldon Hills).

Frye Creek runs between the northern and southern areas of the project site. The majority of the land in this region is privately owned and developed or in the process of development for agricultural, industrial, and residential uses.

Future Land Uses in the Vicinity of the Project Site

The project site is located within the Sacramento County USB and just outside of the UPA (with the exception of a portion of the distribution line alignment). Future land uses in the vicinity of the project site would be guided by master or specific plans adopted by Sacramento County. Exhibit 3.11-1 shows the location of each specific plan area in the vicinity of the project site. The project site is not located within a specific plan area, with the exception of a portion of the distribution line alignment, which would not be expected to inhibit the specific plans to be implemented. The following discussion summarizes the existing and planned land uses proposed in each of these specific plans.



Source: Sacramento County Website 11/24

Exhibit 3.11-1. Specific Plans in the Project Vicinity

It is assumed that future development in the vicinity of the project site would be consistent with the following plans (Sacramento County 2024c):

- **Florin-Vineyard Community Plan.** The Florin Vineyard Community Plan was approved by the Sacramento County Board of Supervisors on December 15, 2010. The Plan area covers approximately 3,872 acres and is located within the community planning areas of both Vineyard and South Sacramento. The boundaries are generally Elder Creek Road on the north, Bradshaw Road on the east, the Churchill Downs neighborhood to the south, and the Union Pacific Railroad tracks on the west. The vision for the plan is to provide for a high quality, clean, safe, long-lasting sustainable community that develops in an orderly and systematic manner with adequate public infrastructure and services.

- **Jackson Township Specific Plan.** The Jackson Township Specific Plan is a proposed 1,391-acre specific plan, bounded by Excelsior Road on the west, Kiefer Boulevard on the north, Jackson Road to the south and the Newbridge Specific Plan to the east. The plan proposes 6,143 residential units, and approximately 2 million square feet of commercial, office and mixed-use development; schools; a fire station and community center; parks; and a large wetland preserve.

- **Mather South Community Master Plan.** The Mather South Community Master Plan within the Mather Field Special Planning Area is focused on redevelopment of the former Mather Air Force Base. The location is bounded by the Mather Golf Course and Mather Lake to the north, the Folsom South Canal to the east, Kiefer Boulevard to the south and the Mather Preserve and Zinfandel Drive to the west. Proposed uses of the 848 acres of Mather south includes residential dwelling units, a 28-acre Environmental Education Campus and a 22-acre Research and Development Campus, among other uses.

- **North Vineyard Station Specific Plan.** The North Vineyard Station Specific Plan area is located in the south-central portion of Sacramento County. The plan was adopted by the Sacramento County Board of Supervisors on November 4, 1998. The Specific Plan area is approximately 1,594 acres in size and is bounded by Florin Road to the north, Gerber Road to the south, Elder Creek to the west and the extension of Vineyard Road to the east. The plan aims to create a balanced mix of residential, commercial, and open space land uses in this 1,594-acre area.

- **The Newbridge Specific Plan.** The Newbridge Specific Plan was adopted by the Sacramento County Board of Supervisors on February 12, 2012. The 1,095-acre specific plan area is just north of the Jackson Highway and is bounded by Kiefer Boulevard on the north, Sunrise Boulevard on the east and Jackson Road on the south. The west boundary of the specific plan area is approximately 2,000 feet west of Eagles Nest Road. The plan aims to create a balanced, sustainable community that integrates low density residential, medium density residential, agricultural, commercial and office, mixed use, and open space land uses in this 1,095-acre area.

- **Vineyard Springs Comprehensive Plan.** The Vineyard Springs Plan area is located in the south-central portion of Sacramento County. The project area consists of approximately 2,650 acres located within the Vineyard Community Planning Area. The Comprehensive Plan area is bounded by Gerber Road to the north, Calvine Road to the south, Excelsior Road on the east, and Bradshaw Road on the west. Proposed uses of the approximately 2,650-acre plan area includes up to 14,000 residential dwelling units, retail space, office space, and community facilities, among other uses.

- **West Jackson Highway Master Plan.** The West Jackson Highway Master Plan is a proposed 5,900-acre master plan in the Jackson Corridor generally bounded by Kiefer Boulevard and Goethe Road to the north and Elder Creek and Florin Roads to the south, the City of Sacramento to the west and Excelsior Road to the east. The West Jackson Highway Master Plan is a comprehensive master plan with approximately 14,763 residential units, 17.3 million square feet of non-residential uses (mixed-use, commercial, employment, industrial), park, open space, and institutional uses.

3.11.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The evaluation of potential impacts of the proposed project on land use and planning was based on a review of aerial photographs, the Sacramento County Zoning Ordinance, the *Sacramento County 2030 General Plan* (Sacramento County 2020), maps of the proposed master plans and specific plans in the area, and coordination with Sacramento County Planning staff (Sacramento County 2024a).

Thresholds of Significance

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 Draft EIR.

Issues Not Discussed Further

Physically Divide an Established Community— There are no residential land uses within the approximately 400-acre project site and none are proposed. The proposed project would not result in any physical division within an established community. The

proposed project would not include any physical feature that would create a barrier, divide, or separate adjacent uses. Existing, or newly constructed roads would extend to the project site from Florin Road, Gerber Road, and Eagles Nest Road. Improved (earthen or graveled) roads would be constructed throughout the site. A new 0.5-mile-long collector line would be constructed within the project site to interconnect the northern and southern portions of the project site. New overhead distribution lines would be within the project site and within utility easements along Florin Road and Eagles Nest Road. For these reasons, **no impact** would occur, and this issue is not addressed further.

Impact Analysis

Impact 3.11-1. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The proposed project would construct, operate, and maintain a PV solar power and battery storage facility interconnected to SMUD's distribution grid. As discussed above, in Section 3.11.1, "Regulatory Setting", the proposed project would be categorized as a Commercial II Solar Facilities by the Sacramento County Zoning Code and approval of a County Use Permit would typically be required for this use within the AG-160 zoning designation. However, the proposed project is exempt from such permitting as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities (Sacramento County 2024b).

County General Plan Policy PF-78 contains siting criteria for determining the location of production and distribution facilities and large megawatt solar facilities. 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. Additionally, according to County General Plan Policy PF-78, siting of large multi-megawatt solar and other renewable energy facilities should avoid "Prime farmland" or lands under active Williamson Act contracts to minimize impacts on county resources. As stated above in Section 3.11.2, "Environmental Setting", the project site's current (and historic) use is agricultural production, and the land underlying the project site is subject to active Williamson Act contracts 69-AP-023.2, 69-AP-023.6, and 69-AP-023.5. Currently, the Williamson Act contracts for these parcels do not include solar PV facilities as a compatible use. As such, the property owners intend to amend their contracts to allow for solar PV facilities and battery energy storage in conjunction with agricultural activities. However, once amended, there would be no conflicts between the proposed project and allowable uses under the Williamson Act contracts. Additionally, the project would not result in the permanent loss of "Prime farmland" as there are no areas of the project site that are classified as "Prime farmland" by the California Department of Conservation. See Section 3.02, "Agricultural Resources", for a detailed discussion on

potential impacts related to agricultural resources, including conflicts with a Williamson Act Contract.

Additionally, the proposed project would not conflict with County General Plan policy PF-79, as the proposed project would continue to be used for agricultural activities and would not negatively affect nearby farm operations (see Section 3.02, "Agricultural Resources"), avoid sensitive biological resources to the extent possible (see Section 3.04, "Biological Resources"), and avoid cultural resources (see Section 3.05, "Cultural and Paleontological Resources").

For these reasons, the proposed project would not conflict with the zoning of, or applicable policies related to, the project site.

After construction is complete, the project would continue to use the land for agricultural activities through continued flood irrigation of the pastures within the project site for grazing, possible crop production, and the potential installation of pollinator friendly vegetation. Vegetation would grow under and between the arrays to prevent erosion and provide forage for sheep to graze. The grazing lands would be irrigated using the existing flood irrigation system, which would be preserved during construction to ensure that it remains functional during project operations.

Consistency issues between implementation of the proposed project and the Sacramento County General Plan or other land use plans and policies are related to land use regulations, which are, in part, based on avoiding or otherwise restricting uses that would adversely impact resources of the development site or adjacent land uses. Land use inconsistencies are not physical effects on the environment under CEQA unless it relates to a physical impact on the environment that is significant in its own right. While EIRs must discuss inconsistencies between the proposed project and applicable plans, plan consistency is not generally a CEQA issue. [2]

Specific impacts and project consistency issues associated with other resource and issue areas are addressed in each technical section of this EIR, as appropriate. These technical sections provide a detailed analysis of other relevant physical environmental effects that could result from implementation of the proposed project and identify mitigation measures, as necessary, to reduce impacts. Implementation of the proposed project would not conflict with adopted County General Plan policies or other land use plan, policy, or regulation that would generate any adverse physical impacts beyond those addressed in detail in the environmental sections of this Draft EIR (agriculture, air quality, biological resources, cultural resources, etc.). Therefore, this impact is considered **less than significant.**

[2] "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).

3.12 Mineral Resources

This section presents the environmental setting related to existing mineral resources, provides a summary of applicable regulatory requirements, and analyzes potential impacts from loss of availability of known mineral resources from the proposed project.

3.12.1 Regulatory Setting

Federal

There are no federal plans, policies, regulations, or laws pertaining to mineral resources are applicable to the proposed project.

State

There are no state plans, policies, regulations, or laws pertaining to mineral resources that are applicable to the proposed project.

Local

Sacramento County 2030 General Plan

The Sacramento County General Plan Conservation Element (Sacramento County 2017) contains the following objectives and policies related to minerals that would apply to the proposed project.

- **Extraction of Minerals Objective**: Orderly extraction of minerals and subsequent reclamation of mined areas with minimal adverse impacts on aquifers, streams, scenic values, and surrounding residential uses
    - **Policy CO-40**: Extractive uses and associated processing uses and facilities shall maintain adequate minimum setbacks to protect adjoining land uses.
- **Aggregates Recycling Objective:** Ten percent and twenty percent of demand for aggregates met by recycled or substitute materials by 2010 and 2020 respectively.
    - **Policy CO-45**: To the maximum extent possible, all base material utilized in County and private road construction shall be composed of recycled asphalt concrete and roadway base material.

3.12.2 Environmental Setting

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's 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 centers (Dupras 1999, O'Neal and Gius 2018). In compliance with SMARA, CGS has established the classification system shown in Table 3.12-1 to denote the location and significance of key extractive resources.

Table 3.12-1. California Division of Mines and Geology Mineral Land Classification System

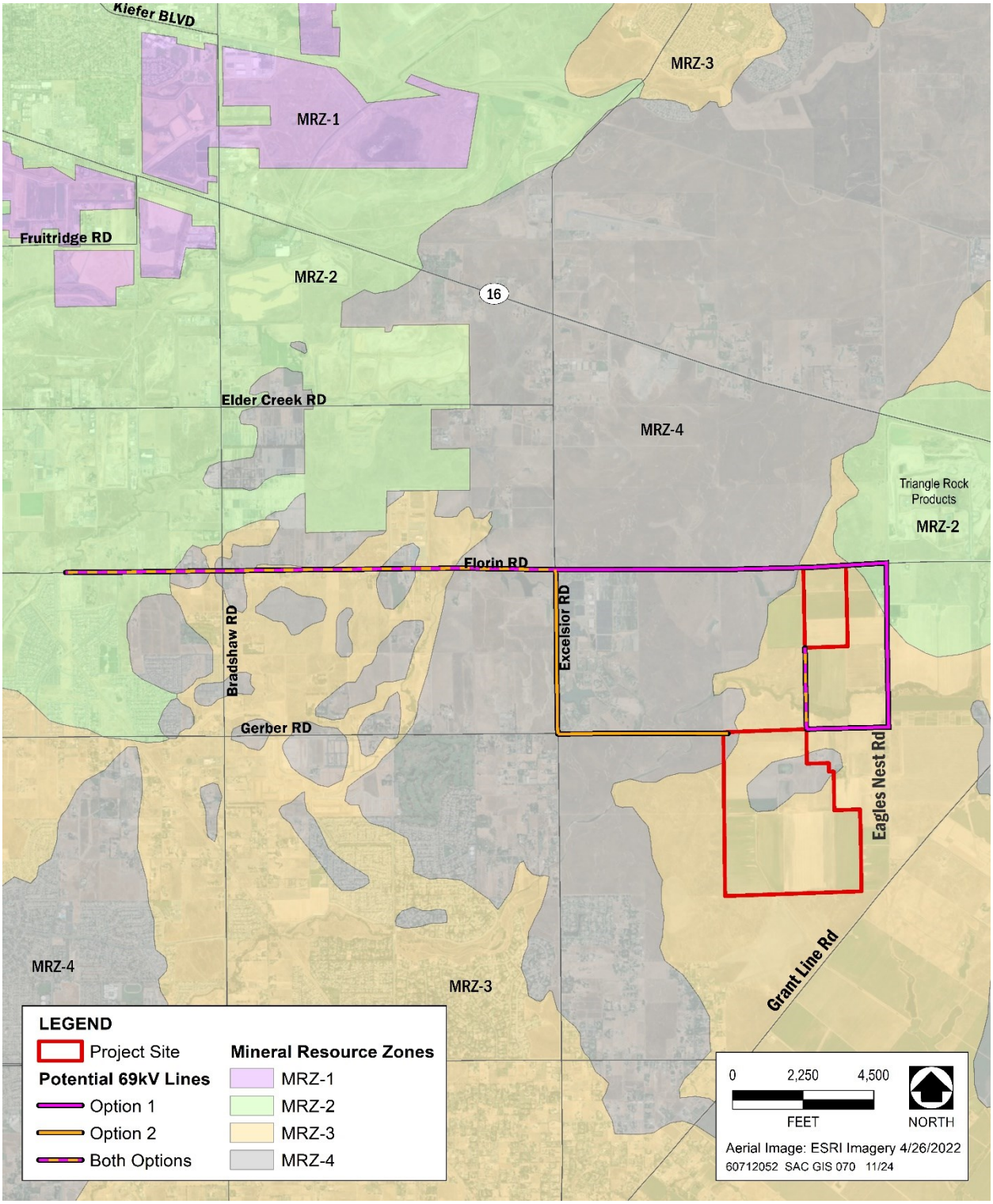
Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where 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.

Source: Dupras 1999
Note: MRZ = Mineral Resource Zone

A variety of historic and active mining operations have been carried out in the project vicinity. Historic placer and dredger mining activities for gold were conducted along ancestral channels of the American River in the project area from the late 1800s through the 1950s. Active aggregate mining operations are ongoing in the project vicinity.

Regionally important known mineral resource deposits are classified by CGS as Mineral Resource Zone (MRZ)-2. As shown in Exhibit 3.12-1[1], the project site is situated adjacent to, but outside of, an area classified by CGS as MRZ-2. The proposed locations for solar panels, BESS facilities, and the substation are classified primarily as MRZ-3, with a small area of MRZ-4.

[1] In 2018, the mineral land classification for Sacramento County was updated (O'Neal and Gius 2018). In the project vicinity, west of the project site, several areas formerly classified as MRZ-3 were reclassified as MRZ-4. The most current (2018) classifications are shown in Exhibit 3.12-1.



Sources: Dupras 1999, O'Neal and Gius 2018

Exhibit 3.12-1. Mineral Resource Classifications

Portions of the Option 1, 69-kV line alignment at the east and west ends along Florin Road, and at the north end of Eagles Nest Road, would be installed within areas classified as MRZ-2. The west end of the Option 2, 69-kV line alignment along Florin Road would also be installed within an area classified as MRZ-2.

An active aggregate mining operation (i.e., Triangle Rock Products, a subsidiary of Vulcan Materials) is present on the north side of Florin Road approximately 0.5 mile northeast of the project site, within an area classified by CGS as MRZ-2 (see Exhibit 3.12-1). Triangle Rock Products has an approved permit to expand its aggregate mining south of Florin Road, east of the project site on the east side of Eagles Nest Road. Triangle Rock's future mining operation would be approximately 0.25 mile (1,350 feet) directly east of the proposed solar panels, BESS facilities, and substation.

3.12.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The mineral resources analysis prepared for this EIR relied on data provided by CGS Mineral Land Classification Reports, and on Sacramento County General Plan mineral resource designations. The information obtained from these sources was reviewed and summarized to present the existing conditions and to identify potential environmental impacts, based on the thresholds of significance presented in this section. Impacts associated with mineral resources that could result from project implementation were evaluated based on existing conditions; expected construction and operational practices; and the nature and locations of potential construction, operational, and maintenance activities.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to mineral resources if it would:

- Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?
- 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?

Impact Analysis

Impact 3.12-1: Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

As described previously, areas of known regionally important deposits of mineral resources are classified by CGS as MRZ-2. As shown in Exhibit 3.12-1, the project's proposed solar panels, BESS facilities, and substation (which are all located within the area outlined as "project site") would be installed in areas that are classified primarily as

MRZ-3, with a small area of MRZ-4 (O'Neal and Gius 2018). These classifications denote areas of undetermined mineral significance, and areas where information is not available for placement into any other classification, respectively. These areas do not contain known regionally important deposits of mineral resources, and thus there would be **no impact**.

As also shown in Exhibit 3.12-1, portions of the Option 1, 69-kV line alignment at the east and west ends along Florin Road, and at the north end of Eagles Nest Road, would be installed within areas classified as MRZ-2 (O'Neal and Gius 2018). Also, the west end of the Option 2, 69-kV line alignment along Florin Road would be installed within an area classified as MRZ-2 (O'Neal and Gius 2018). However, the proposed overhead line facilities along Florin Road and Eagles Next Road would consist of power poles and overhead electrical lines within the road rights-of-way, in the same locations as the existing 12-kV poles and overhead lines. Installing and operating the proposed poles and overhead lines along the existing roadways would not affect the ability of any mineral resources to be recovered from the adjacent land classified as MRZ-2. Thus, the proposed project would not result in a loss of availability of regionally important mineral resources, and there would be **no impact.**

Impact 3.12-2: Would the project result in the loss of availability of 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 2030 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 (Dupras 1999, O'Neal and Gius 2018). Therefore, for the same reasons discussed in Impact 3.12-1 above, the proposed project would not result in the loss of availability of locally important mineral resource recovery sites, and thus there would be **no impact.**

3.13 Noise

This section 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 noise and vibration impacts.

3.13.1 Regulatory Setting

Various agencies have established noise guidelines and standards to protect citizens from potential hearing damage and other adverse physiological and social effects associated with noise and vibration.

Federal

Although not directly applicable to the proposed project, the research that supported the development of federal community noise standards provides a context for 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.[1] Although the U.S. Environmental Protection Agency (EPA) was given a major role in disseminating information to the public and coordinating federal agencies, each federal agency retains authority to adopt noise regulations pertaining to agency programs.[2]

In 1974, in response to the requirements of the federal Noise Control Act, the EPA identified indoor and outdoor noise level limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor and indoor noise exposure limits of 55 decibels (dB) Day-Night Average Sound Level (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 settings. The sound-level criterion identified to protect against hearing damage in commercial and industrial areas is 70 dB 24-hour Equivalent Sound Level (L_{eq}) (both outdoors and indoors).

[1] The U.S. Environmental Protection Agency (EPA) was given the responsibility for providing information to the public regarding identifiable effects of noise on public health and welfare, publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety, coordinating federal research and activities related to noise control, and establishing federal noise emission standards for selected products distributed in interstate commerce. The Noise Control Act also directed that all federal agencies comply with applicable federal, State, interstate, and local noise control regulations.

[2] The EPA can, however, require other federal agencies to justify their noise regulations in terms of the Noise Control Act policy requirements.

The EPA's Office of Noise Abatement and Control was established to coordinate federal noise control activities. In 1981, EPA 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, Federal Transit Administration and U.S. EPA Vibration Guidelines

To address the human response to groundborne vibration, the Federal Transit Administration (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 vibration decibels (VdB) referenced to 1 microinch per second (µin/sec) and based on root mean square (RMS) velocity amplitude for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities); 80 VdB for residential uses and buildings where people normally sleep; and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2018).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics (CHABA) at the request of the U.S. Environmental Protection Agency (FTA 2018). For fragile structures, CHABA recommends a maximum limit of 0.25 inches per second (in/sec) peak particle velocity (PPV) (FTA 2018).

State

In 1971, the State of California required cities and counties to include noise elements in their general plans (Government Code Section 65302 et seq.). The State of California General Plan Guidelines (Office of Planning and Research 2017) identify guidelines for the noise elements of local general plans, including a sound level/land-use compatibility chart. The noise element guidelines identify the "normally acceptable" range of noise exposure for low-density residential uses as less than 60 dB L_{dn}, and the "conditionally acceptable" range as 55-70 dB L_{dn}. The "normally acceptable" range for high-density residential uses is identified as below 65 dB L_{dn}, and the "conditionally acceptable" range is identified as 60-70 dB L_{dn}. For educational and medical facilities, levels below 70 dB L_{dn} are considered "normally acceptable," and levels of 60-70 dB L_{dn} are considered "conditionally acceptable." For office and commercial land uses, levels below 70 dB L_{dn} are considered "normally acceptable," and levels of 67.5–77.5 dB L_{dn} are considered "conditionally acceptable." 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 3.13-1.

In 1984, State noise element provisions were revised to recognize guidelines prepared by the Office of Noise Control of the California Department of Health Services and to analyze and quantify, "to the extent practicable, as determined by the legislative body," noise from the following sources: highways and freeways; primary arterials and major local streets; passenger and freight on-line railroad operations and ground rapid transit systems; commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and other ground facilities and maintenance functions related to airport operation; local industrial plants, including, but not limited to, railroad classification yards; and other stationary noise sources identified by local agencies as contributing to the community noise environment. As noted in the General Plan Guidelines, the Office of Planning and Research notes that the Department of Health Services Office of Noise Control no longer exists, and the guidelines have been incorporated into the General Plan Guidelines for Noise Elements (OPR 2017).

Table 3.13-1. Land Use Noise Compatibility Guidelines

Land Use Category	Normally Acceptable[1] Community Noise Exposure (CNEL/L_{dn}, dBA)	Conditionally Acceptable[2] Community Noise Exposure (CNEL/L_{dn}, dBA)	Normally Unacceptable[3] Community Noise Exposure (CNEL/L_{dn}, dBA)	Clearly Unacceptable[4] Community Noise Exposure (CNEL/L_{dn}, dBA)
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 structures from transient vibration sources, the California Department of Transportation (Caltrans) recommends a threshold of 0.2 in/sec PPV for fragile buildings and 0.5 in/sec PPV for older structures (Caltrans 2020). These standards are more stringent than the recommended guidelines established by the FTA, presented above. Table 3.13-2 shows the general thresholds for structural responses to vibration levels.

Table 3.13-2. Structural Responses to Vibration Levels

Structure and Condition	Peak Vibration Threshold (in/sec PPV)	
	Transient Sources	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

Sacramento County 2030 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. Table 3.13-3 and Table 3.13-4 include excerpts from the Sacramento County General Plan Noise element that outline non-transportation noise standards and requirements for acoustical analyses prepared in Sacramento County, respectively.

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 3.13-3 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 3.13-4.

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 3.13-3. Non-Transportation Noise Standards
Sacramento County Noise Element Median (L_{50}) / Maximum (Lmax)[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 3.13-3 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 3.13-3, 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 3.13-4. 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 3.13-5 includes excerpts from the Noise Control Ordinance.

Table 3.13-5. 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. 10 p.m.–7 a.m.	55 dB 50 dB

a Noise standard, 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

Source: County of Sacramento Code, Noise Control 1976

c. Each of the noise limits specified in subdivision (b) of this section shall be reduced by five dB for impulsive or simple tone noises, or for noises consisting of speech or music.

d. If the ambient noise level exceeds that permitted by any of the first four noise-limit categories specified in subdivision (b), the allowable noise limit shall be increased in five dB increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

Notes: dB = A-weighted decibels

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.

3.13.2 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).[3] A commonly used unit for frequency is cycles per second, called hertz (Hz).[4]

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

[3] 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.

[4] 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.

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.

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 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 Exhibit 3.13-1.

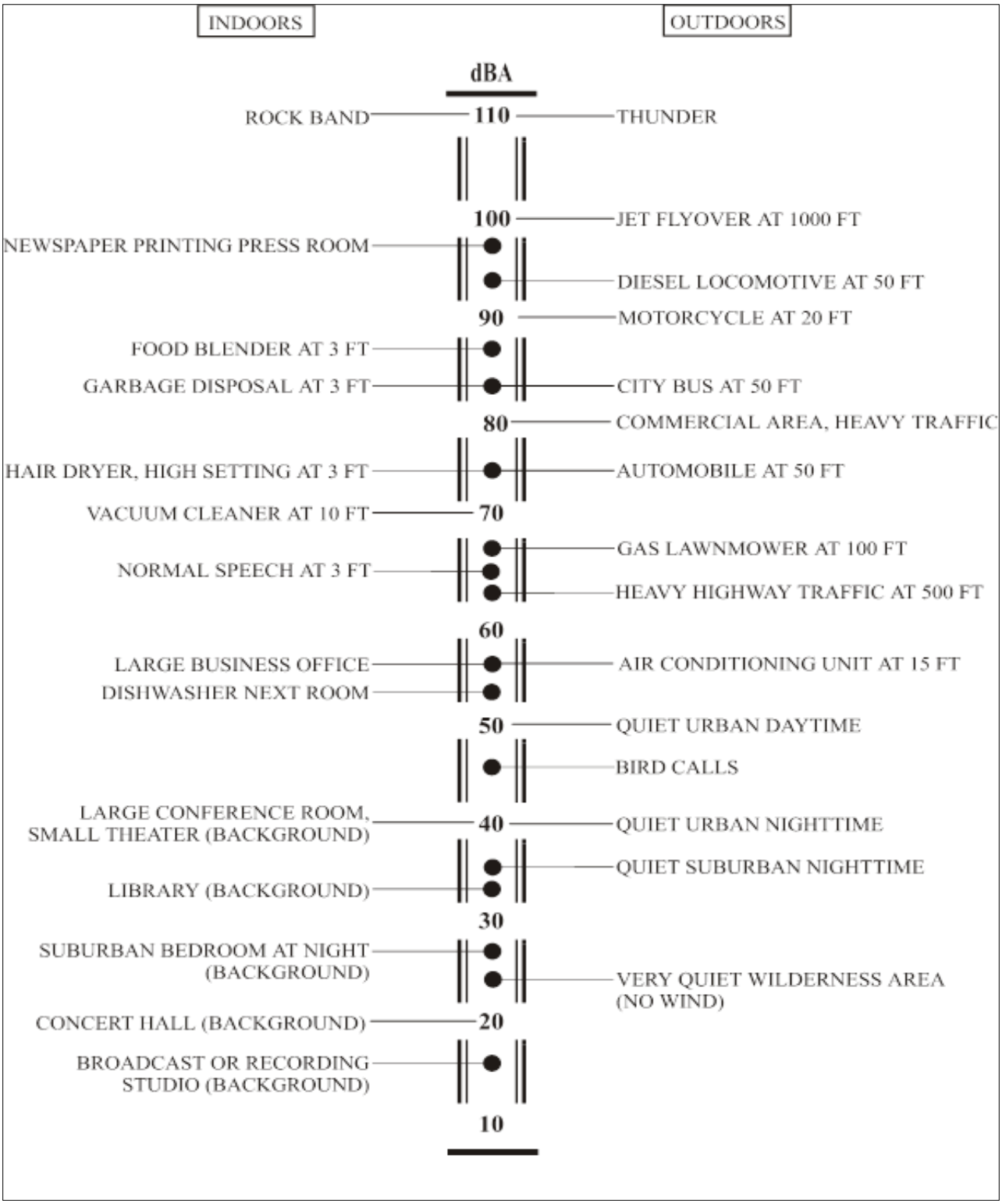
Because the human ear is not equally sensitive to all sound frequencies, a specific frequency-dependent rating scale was devised to relate noise to human sensitivity. A dBA scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. 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 3.13-6[5]

Table 3.13-6. 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

[5]Table 3.13-6 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.



Source: Caltrans 2013
Notes: dBA = A-weighted decibels

Exhibit 3.13-1: Typical Noise Levels

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 Fundamentals

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 PPV or 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 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 3.13-7, which was developed by the 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 VdB, which serves to compress the range of numbers required to describe vibration (FTA 2018). This is based on a reference value of one 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 3.13-7. 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: PPV=peak particle velocity; In/sec=inches per second; 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 3.13-8 shows the criteria established by the FTA for the likelihood of structural damage due to vibration.

Table 3.13-8. 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; PPV = peak particle velocity; Lv = Vibration Level; VdB = Vibration Decibel.
[a] Root mean square (RMS) velocity calculated from vibration level (VdB) using the reference of one micro-inch/second.

Existing Noise Environment

Sensitive Receptors

Noise-sensitive land uses generally consist of those uses where noise exposure would result in adverse effects on uses for which quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise. Other examples of noise-sensitive land uses include nursing homes, schools, hospitals, libraries, childcare facilities, and places of worship.

The project site is located in Sacramento County, south of the City of Rancho Cordova and north of Wilton (Exhibit 2-1). Surrounding land uses immediately adjacent to the project site include agricultural fields and existing open space preserves with seasonal wetland, riparian, and annual grassland vegetation. Noise-sensitive land uses in the vicinity of the project site include the residential properties to the east, west and south of the project site and along the project line routes. The nearest noise-sensitive uses would be located 50 feet to 2,500 feet from the project activities.

Community Noise Survey

A community noise survey was conducted from December 4th through December 5th, 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 area roadways.[6]

Community noise survey locations are shown in Exhibit 3.13-2. The L_{eq}, and L_{max} values were taken at two long-term (LT) and three short-term (ST) ambient noise locations, with the results presented in Table 3.13-9. During the survey, average daytime ambient noise levels ranged from 46 dB to 59 dB L_{eq}, with maximum noise levels that ranged from 64 dB to 84 dB L_{max}.

[6] 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]).

Table 3.13-9. 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	By 8267 Chester Drive	12/4/2024 – 12/5/2024	24 Hour	54	46 \ 64	48 \ 59
LT-02	By 7420 Eagles Nest Road	12/4/2024 – 12/5/2024	24 Hour	61	59 \ 84	53 \ 70
ST-01	Near 10790 Birch Ranch Drive	12/4/2024	13:19	NA	63 \ 84	NA
ST-02	Near 10072 Florin Road	12/4/2024	13:58	NA	69 \ 84	NA
ST-03	Near 9534 Florin Road	12/4/2024	14:30	NA	72 \ 93	NA

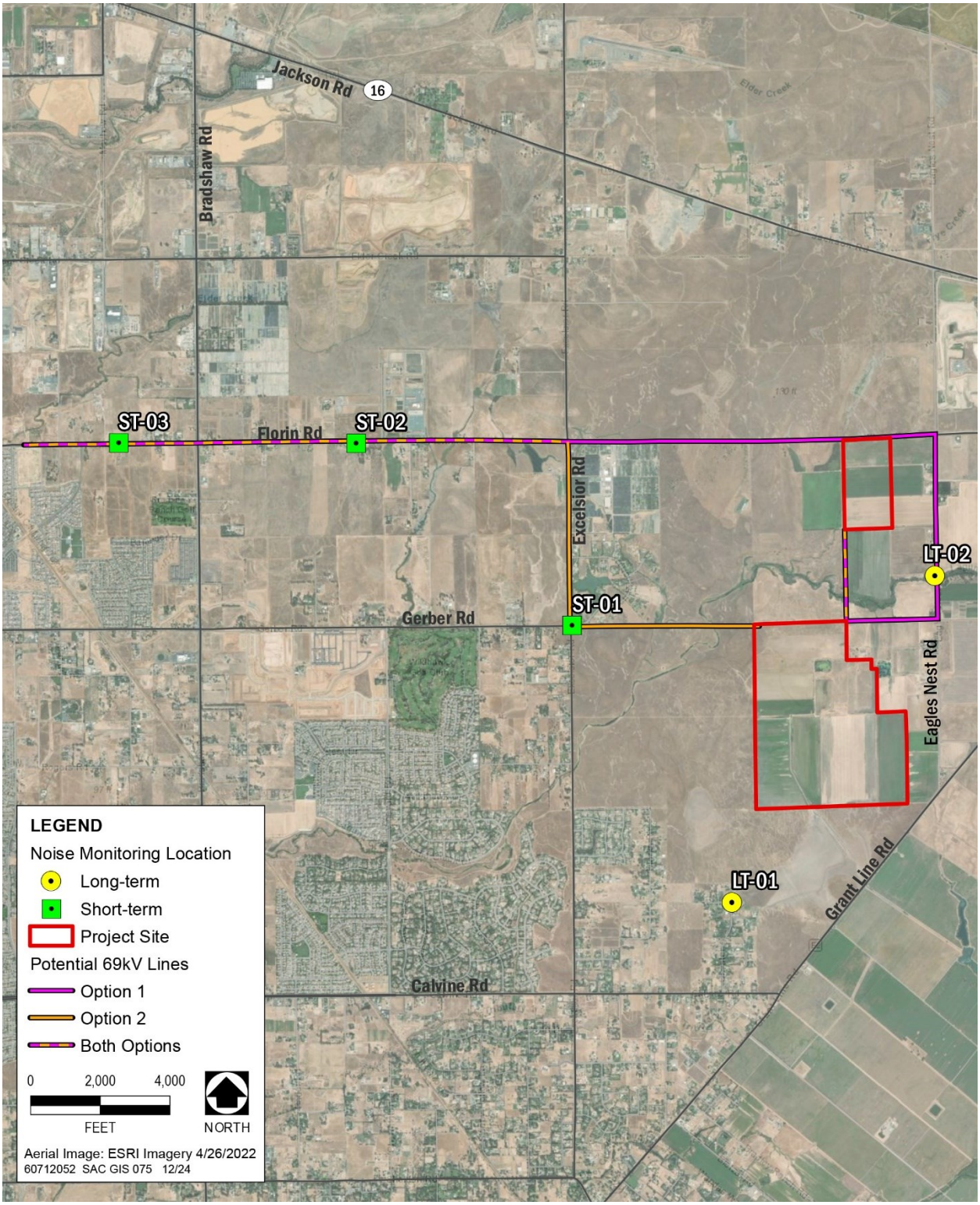
Source: Data collected by AECOM, 2024.

Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level; L_{eq} = the equivalent hourly average noise level; L_{max} = maximum noise level; LT = long-term; NA = not applicable; ST = short-term.

Monitoring locations correspond to those depicted in

Existing Noise Sources

The principal noise source near the project site is vehicular traffic on nearby roadways. Noise from the aircraft operation and agricultural land activities and noise from distant railways, and from overhead aircraft also contribute to a lesser extent to the existing noise environment.



Source: AECOM 2024

Exhibit 3.13-2: Noise Monitoring Locations

3.13.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

To assess potential short-term, temporary (i.e., construction-related) noise impacts, sensitive receptors[7] and their relative exposure were identified. Noise levels of specific construction equipment were determined and resultant noise levels modeled at 50 feet were calculated. Potential long-term (i.e., operational) noise was assessed based on reconnaissance data and documented noise levels. Predicted noise levels during construction are shown in Table 3.13-10 which were compared with applicable County standards shown in Table 3.13-3 for determination of significance.

Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, a noise and vibration impact is considered significant if the implementation of the proposed project under consideration would result in any of the following:

- 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[8] groundborne vibration or groundborne noise levels;
- 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 for people residing or working in the project 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.

[7] In the area surrounding the project, there are numerous sensitive receptors. To ensure clarity and interpretability, the figure includes only the representative sensitive receptor locations where noise measurements were conducted. These locations were selected to capture the range of noise exposure and to focus on receptors most likely to experience significant impacts. This approach aligns with standard noise assessment practices and provides a comprehensive understanding of the existing noise environment while maintaining the figure's readability.
[8] In excess of the applicable Caltrans vibration standards applicable to large construction equipment.

Table 3.13-10. Construction Noise Levels, dBA

Construction Phase	Anticipated Type of Equipment that May Be Utilized by the Contractor*	Noise Level at 50 Feet	
		L_{max}, dBA	L_{eq}, dBA
Demolition	Dump Truck	76	72
	Excavator	81	77
	Generator	81	78
Max. and Combined Noise Level		**81**	**81**
Site Preparation	Dump Truck	76	72
	Excavator	81	77
	Generator	81	78
	Grader	85	81
	Compactor (ground)	83	76
	Pumps	81	78
	Dozer	82	78
	Front End Loader	79	75
	Dozer	82	78
	Tractor	84	80
	Slurry Trenching Machine	80	77
	Welder / Torch	74	61
	Dump Truck	76	72
	Dozer	82	78
Max. and Combined Noise Level		**85**	**89**
Grading	Dump Truck	76	72
	Excavator	81	77
	Generator	81	78
	Grader	85	81
	Compactor (ground)	83	76
	Tractor	84	80
	Slurry Trenching Machine	80	77
	Dump Truck	76	72
	Dozer	82	78
Max. and Combined Noise Level		**85**	**87**
Building Construction	Drill Rig Truck	79	72
	Compressor (air)	78	74
	Impact Pile Driver	101	94
	Concrete Mixer Truck	79	75
	Concrete Saw	90	83
	Crane	81	73
	Dump Truck	76	72
	Excavator	81	77
	Man Lift	75	68
	Generator	81	78
	Grader	85	81
	Compactor (ground)	83	76
	Tractor	84	80
	Slurry Trenching Machine	80	77
	Dump Truck	76	72
	Dozer	82	78
Max. and Combined Noise Level		**101**	**95**
Paving	Dump Truck	76	72
	Excavator	81	77
	Generator	81	78
	Grader	85	81
	Paver	77	74
	Roller	80	73
Max. and Combined Noise Level		**85**	**85**

Source: FHWA 2006, Data Compiled by AECOM, 2024.
Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; L_{eq} = the equivalent hourly average noise level.

For evening and nighttime construction activity, the analysis applies the County noise limits provided on Table 3.13-3.

Summary of permitted hours of construction for the Sacramento County are shown in Table 3.13-11.

Table 3.13-11. 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 p.m. and 7 a.m.
Sundays and holidays	between the hours of 8 p.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, 2024, adapted by AECOM 2024.
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 four miles north of the project site, and although the project site is within the boundaries of the Mather Airport Land Use Compatibility Plan, Airport Influence Area Review Area 2, it would not have an impact in relation to the Mather Airport Influence Area because it is not located within two miles of the airport and would neither introduce sensitive uses at the project site nor would it result in any impacts associated with airport noise contours. There is also one smaller local airport in the project vicinity: Rancho Murieta Airport (approximately eight miles to the east). 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.

Impact Analysis

Impact 3.13-1. Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise.

Short-term construction source noise levels could exceed the applicable County standards at nearby noise-sensitive receptors.

Major noise-generating construction activities could include site grading and excavation, installation of infrastructure, and paving. The highest construction noise levels, as shown in Table 3.13-10 would reach to 95 dBA, L_{eq}, and are typically generated during site preparation and building construction, and lower noise levels range between 72 to 87 dBA, L_{eq}, typically occur during fence demolition, grading, and paving. 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.

As described in Chapter 2, “Project Description”, 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 early morning or evening hours to meet weather restriction parameters (i.e., excessive heat).

As discussed above under Section 3.13-1, “Regulatory Setting”, 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. Therefore, significant impacts to sensitive receptors would be anticipated should activities occur at nighttime, outside of the allowed hours stipulated by the County Noise Ordinance.

Daily trips would be generated for the delivery of equipment and supplies and by commuting of the construction workforce. The number of construction workers onsite would vary throughout the construction period, peaking at 263 workers (resulting in 526 total trips per day) during the Photovoltaic (PV) System Installation phase. These trips would not substantially increase existing traffic volumes along roadways surrounding the project site, as they would be dispersed across multiple directions and roadways in the area. Additionally, doubling the traffic volume along a roadway would result in an increase of only 3 dB in traffic noise levels (Caltrans 2013). Therefore, the addition of project-related traffic to existing volumes is not expected to cause a significant noise increase at the nearest noise-sensitive uses located along the roadway centerlines near the project site.

Construction activities that occur within the permitted hours (Section 6.68.090(e) of the County of Sacramento Code (refer to Table 3.13-11) are exempt from the County noise

standards. However, as discussed above, limited work may need to occur outside of permitted construction hours as required by traffic control permits or heat restrictions. For traffic noise to cause a perceptible increase, project-related traffic volumes would need to increase existing traffic volumes along the area roadways by more than 100 percent. However, project-related traffic would be minimal compared to existing traffic volumes along the area roadways. Thus, the impact of construction noise, including that resulting from construction-related traffic, which occurs during daytime hours conforming to the County Noise ordinance, is considered **less than significant**.

Project construction activities related to the distribution line work may generate noise levels that exceed the noise ordinance standards for brief periods, but no single use would be exposed to the entirety of the distribution line construction activities simultaneously. Rather, the construction activities would move along the alignment, so the duration of noise exposure at any particular location would be short-term.

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 noise levels are shown in Table 3.13-10, above. As shown, project construction noise levels would range from 61 dB, L_{eq} to 95 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 72 dB, L_{eq} to 87 dB L_{eq} at the nearest noise-sensitive use. The nearest sensitive receptors would be residential properties 50 feet from the line routes, and 1,500 to 2,500 feet from the project site. The construction noise level experienced at the property line of this residential uses was calculated using FHWA reference levels (FHWA 2006).

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 Sacramento County Noise Ordinance, if construction activities were to occur during more noise-sensitive hours outside of those prescribed by the Ordinance, construction source noise levels could result in annoyance and/or sleep disruption to occupants of existing noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. This impact is considered **potentially significant**. The following measures shall be implemented during construction outside permitted construction hours to reduce this impact.

Mitigation Measures

Mitigation Measure 3.13-1. For Construction 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 construction contractors shall employ noise-reducing construction practices to avoid and minimize construction noise effects on sensitive receptors outside permitted construction hours:

- Pile driving shall be limited to the hours between 6 a.m. and 8 p.m. Monday through Friday and Sunday, and between 7 a.m. and 6 p.m. on Saturdays.
- 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 land uses.
- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- All motorized construction equipment shall be shut down when not in use to prevent idling.
- Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site).
- Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators).
- Written notification of construction activities shall be provided to all noise-sensitive receptors located within 500 feet of the project site. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification.
- Should nighttime construction (including very early morning) become necessary, the project applicant shall conduct a preliminary noise assessment to evaluate the potential for exceedances at the property boundaries of the nearest sensitive receptors. This assessment will determine if additional mitigation, such as real-time noise monitoring or other measures, is warranted. This ensures compliance with the County Noise Ordinance while maintaining flexibility and practicality in project execution.

Significance after Mitigation

With the implementation of Mitigation Measure 3.13-1, impacts from temporary exposure of sensitive receptors to noise outside permitted construction hours would be reduced by eliminating certain construction activities at night (i.e., pile driving), using noise enclosures, and locating construction equipment away from sensitive receptors. As a result, with implementation of Mitigation Measure 3.13-1, the impact would be **less than significant with mitigation.**

Impact 3.13-2. Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction.

Short-term construction activities would not expose sensitive receptors to groundborne noise and vibration levels that would exceed applicable standards that indicate human disturbance or damage to structures could result. As a result, and as detailed in the discussion that follows, this impact is considered less than significant.

The movement and operation of the project's construction equipment may generate temporary groundborne vibration and have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used, the location of construction activities relative to sensitive receptors, the operations/activities involved, and the construction material of the vibration-sensitive uses (the buildings and houses) affected. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance (approximately 9 VdB per doubling of distance from the source). The type and density of soil can also affect the transmission of energy. Table 3.13-12 provides vibration levels for typical construction equipment.

Table 3.13-12. 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
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 determines that the vibration level of 80 VdB (0.04 in/sec PPV)

would be distinctly perceptible. Therefore, remaining less than 80 VdB at residential uses would avoid human annoyance. Also, Caltrans recommends staying below 0.3 in/sec PPV at older residential structures and below 0.5 in/sec PPV for new residential structures (Table 3.13-2), to avoid structural damage (Caltrans 2020).

The construction equipment for the proposed project producing the most vibration would include bulldozers, vibratory rollers, and pile drivers, 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 uses (buildings) nearest to the construction sites are the residential structures along project line route 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 0.5 in/sec PPV recommended by Caltrans.
- **Vibratory Rollers.** Vibratory rollers are frequently used for backfill and paving work. As shown in Table 3.13-12, 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 uses), which would be below the 0.5 in/sec PPV recommended by Caltrans for structural damage, and below the criteria of 80 VdB for human annoyance.
- **Pile Drivers.**[9] Pile driving would occur on-site during the PV System Installation construction phase. As shown in Table 3.13-12, typical pile driving would generate vibration levels of up to 0.644 in/sec PPV and 104 VdB at a distance of 25 feet. This level, at the sensitive uses nearest to the project construction, would attenuate to less than 60 VdB and 0.003 in/sec PPV, which would be less than the structural damage criteria of 0.5 in/sec PPV, and below the human annoyance criteria of 80 VdB recommended by Caltrans.

Construction of the proposed distribution line would not include the use of major equipment, such as impact pile drivers, that would result in high levels of ground vibration.

Therefore, short-term construction of the project would not exceed the threshold for structural damage (within the project site or along the distribution line alignment), and it would not expose persons to or generate excessive groundborne noise or vibration at the nearest sensitive receptors. For these reasons, this impact would be considered **less than significant**.

Impact 3.13-3. Permanent Exposure of Off-Site Noise-Sensitive Receptors to Generation of Non-Transportation Noise Levels in Excess of Local Standards.

[9] Construction activities related to the proposed distribution line would not include the use of major equipment, such as impact pile drivers.

The proposed project would introduce non-transportation noise sources including the installation of solar panels and associated facilities that include inverters, transformers, an interconnection 69kV line, BESS facilities, and a new substation. Table 3.13-13 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 tracking motors, if a tracking system is used. As provided on Table 3.13-13, 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.

Noise may also be generated by equipment within the substation; typically, this includes switches, protection and control equipment, transformers, and the incoming 69kV lines. The noise generated by typical 69kV lines and switches is about 25 dBA at 50 feet. Transformers within the substation would generate noise levels like those at the inverters. Substation switches 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 feeders and transformers within the substation. Additionally, the primary noise generator from the BESS facilities would be the heating ventilation and air conditioning (HVAC) units. The BESS facilities would generally be set back from the property lines and would be located near the substation.

Table 3.13-13. 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})
PV Panel	44	50	44
Inverter (unenclosed)	52	75	56
Inverter (enclosed with HVAC system)	58	75	62
Substation 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 3.13-13, the highest operational noise levels would occur from the inverter and HVAC system (i.e., 62 dBA at 75 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 3.13-13, based on a noise rating of 62 dBA at 75 feet from the inverter and HVAC system, such facilities would need to be located approximately 200 feet from the nearest noise-sensitive land use. There are no noise-

sensitive uses within this distance; the nearest noise-sensitive use is approximately 1,500 feet from the project site boundary. Therefore, the impact is **less than significant**.

Maintenance activities for the proposed project would include periodic inspections, and as-needed repair or replacement of the panels or platforms, power distribution facilities, substation maintenance, BESS maintenance, and fencing. Additional activities would include ongoing agricultural operations, 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**.

The operation of the reconductored distribution line is not expected to generate significant noise impacts. The primary source of noise during the operational phase is corona discharge, a faint crackling or hissing sound that occurs when the electric field around the conductor ionizes the surrounding air. This noise is most noticeable during wet weather conditions, such as rain or high humidity, but is minimal under typical dry conditions. For 69kV distribution lines, corona noise levels generally remain below 40 dBA at 50 feet, which is considered low and often indistinguishable from background noise in most environments. At greater distances, operational noise attenuates further and becomes negligible.

Routine maintenance activities, such as inspections or minor repairs, may also generate temporary noise from vehicles and equipment. However, these activities are infrequent, short-term, and not representative of continuous operational noise. Noise-sensitive receptors near the distribution line corridor, the nearest being approximately 50 feet from the distribution line alignment, are unlikely to experience noticeable increases in ambient noise levels due to the low magnitude and intermittent nature of operational noise. In rural and urban areas alike, operational noise from the line is typically masked by existing ambient noise, such as traffic or natural environmental sounds. Therefore, operational noise impacts from the distribution lines are expected to be well below regulatory thresholds. This impact is **less than significant**.

3.14 Population and Housing

This section discusses potential impacts on population and housing related to the project. This section describes the regulatory and environmental setting, the criteria used to evaluate the potential for significant impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

3.14.1 Regulatory Setting

The area evaluated in this section includes Sacramento County and all incorporated cities within the County and could potentially provide workforce for the project.

Federal

No federal statutes, regulations, or policies govern population and housing on the project site.

State

No state statutes, regulations, plans, or policies govern population and housing on the project site.

Local

Sacramento County 2030 General Plan

The Sacramento County Housing Element is part of Sacramento County's 2030 General Plan and sets forth policies and programs to address housing needs for all households within the County's unincorporated areas. The 2021-2029 Housing Element was adopted by the County's Board of Supervisors on March 8, 2022 (Sacramento County 2022).

3.14.2 Environmental Setting

Population

The project site is located in unincorporated southeastern Sacramento County, south of the City of Rancho Cordova and north of Wilton. The mean commute time in Sacramento County is 27.8 minutes (US Census Bureau 2022a). Given the location of the project in proximity to many incorporated cities, this analysis considers the population of all incorporated cities within Sacramento County. These include Citrus Heights (16 miles northwest), Elk Grove (15 miles southwest), Folsom (17 miles northeast), Galt (21 miles south), Isleton (39 miles southeast), Rancho Cordova (9 miles north), Sacramento (14 miles west). Table 3.14-1 below shows the historical population growth for these cities and Sacramento County from 2004 to 2024.

Table 3.14-1. Historical Population Growth, 2004-2024

County/City	2004	2009	2014	2019	2024
Sacramento County	1,331,910	1,406,168	1,485,006	1,570,918	1,578,938
Citrus Heights	85,940	83,317	84,922	87,477	85,554
Elk Grove	113,391	149,302	162,138	172,514	178,679
Folsom	64,396	71,625	74,888	79,709	88,023
Galt	21,952	23,854	24,098	25,228	25,785
Isleton	831	802	789	790	767
Rancho Cordova	54,979	62,724	69,603	77,811	82,109
Sacramento	436,799	463,633	482,732	511,893	520,407

Sources: CDF 2012; CDF 2021(a); CDF 2021(b); CDF 2024(a).

Housing

Table 3.14-2 outlines housing data for Sacramento County along with the incorporated cities within the County. Vacancy rates for these jurisdictions ranged from 2.2 percent (Galt) to 19.8 percent (Isleton). In 2024, Sacramento County had an estimated 606,021 housing units with a vacancy rate of 3.9 percent; the City of Sacramento had an estimated 209,119 housing units with a vacancy rate of 4.8 percent; and the City of Elk Grove had an estimated 58,979 housing units with a vacancy rate of 2.4 percent.

Table 3.14-2. 2024 Housing Data Estimates

County/City	Total Housing Units	Occupied Housing Units	Vacant Housing Units	Vacancy Rate
Sacramento County	**606,021**	**582,141**	**23,880**	**3.9%**
Citrus Heights	36,270	34,862	1,408	3.9%
Elk Grove	58,979	57,591	1,388	2.4%
Folsom	33,113	31,727	1,386	4.2%
Galt	8,709	8,521	188	2.2%
Isleton	388	311	77	19.8%
Rancho Cordova	30,751	29,799	952	3.1%
Sacramento	209,119	199,097	10,022	4.8%

Source: CDF 2024

The number of households is expected to increase by 27 percent in Sacramento County over the period from 2016 to 2040. In the cities of Sacramento and Elk Grove, the number of households are expected to increase by 38 percent and 24 percent respectively in the 24-year time period (SACOG 2019).

Temporary Housing

The City of Sacramento has numerous full-service hotels and motels. In addition, various tent and RV campgrounds within Sacramento County are available for temporary housing accommodations.

3.14.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

Potential impacts associated with population and housing are evaluated based on the potential for the project to induce substantial unplanned population growth, either directly or indirectly, and the potential for the project activities to displace existing people or housing. The evaluation of these impacts uses relevant population and housing data from the project's surrounding areas to support the answers to the following checklist questions.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact related to population and housing if it would:

- Induce substantial unplanned 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);
- Displace substantial numbers of existing people or housing, necessitating the construction or replacement of housing elsewhere.

Impact Analysis

Impact 3.14-1. 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 include the construction of any new housing or businesses, and thus, would not directly induce population growth. Additionally, the project would not indirectly induce population growth as a result of the construction of access roads and internal roads, or from other project infrastructure within the project site because these features would not be accessible to the public. While this project is expected to increase the availability of electricity capacity and storage, it would provide renewable energy to existing communities to fulfill existing energy demands, consistent with state mandates and to support SMUD's 2030 Zero Carbon Plan. Therefore, the energy produced by this project would not directly or indirectly encourage new development or induce population growth.

Project construction is anticipated to take approximately 18 to 24 months to complete, and is proposed to begin as early as the third quarter of 2026 and conclude in 2028. The expected number of construction workers onsite daily would vary by construction phase, with an expected daily average of 13 workers and a peak of 15 daily workers for the initial construction phase (site preparation), and a daily average of 219 workers and a maximum of 263 daily workers during the main construction phase (building/infrastructure

construction). Once operational, one regular onsite employee may be required for the day-to-day operation of the facility, and some additional personnel may be required on an as-needed basis to monitor, maintain, and, if needed, repair the system. Panel washing is estimated to occur once a year, requiring a limited number of staff for a short amount of time.

Due to the substantial population of the areas surrounding the project site, the workforce is anticipated to be primarily hired from the immediately surrounding areas, consistent with SMUD's goals for local community benefits. The U.S Census Bureau estimates that in 2022 there were 53,221 persons employed in the construction industry in Sacramento County (US Census Bureau 2022b). Given the temporary construction period and the relatively low number of workers needed for project construction and operation, it is reasonable to anticipate that the existing labor pool in Sacramento County could serve the number of jobs created by the project. Therefore, the project would not cause a substantial influx of personnel that would need new housing and thus the project would not result in unplanned population growth.

Because of the abundance of available construction staff within Sacramento County, workers would be expected to commute from their homes in nearby cities and communities, rather than relocate. If construction workers on this project were to relocate closer to the project site, the County's housing market would have the capacity to absorb the increase in residents without requiring the construction of new housing units. California Department of Finance housing estimates for 2024 indicate that the County had approximately 23,880 vacant housing units, with 10,022 of those vacant units located in the City of Sacramento, approximately 14 miles west of the project site (CDF 2024). Therefore, construction and operation activities associated with the project are not expected to require substantial numbers of new housing units, the construction of which could cause environmental impacts. In addition, Sacramento County and its unincorporated communities provide many options for temporary housing such as hotels, motels, and campgrounds accommodating trailers.

In summary, the project is not expected to induce population growth directly or indirectly and the energy produced by the project would not directly or indirectly encourage new development or induce population growth. Therefore, **no impact** would occur.

Impact 3.14-2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed project, if approved, would be built on land currently used for agriculture. There are no homes or people living within the project site that would be displaced by the project, eliminating the need to construct housing elsewhere to replace homes. Therefore, **no impact** would occur.

3.15 Public Services

This section discusses the regulatory setting of public services within the State and County, the environmental setting including which public service districts serve the area occupied by the project, and the impacts that the project would have on public services in the area.

3.15.1 Regulatory Setting

This section includes a summary of applicable regulations related to public services, a description of public services provided at and near the project site, and a discussion of the public services impacts associated with the Oveja Ranch Solar Project.

Federal

There are no federal statutes, regulations, plans, or policies governing public services that are applicable to this project.

State

California Fire Code

The California Fire Code adopts by reference the International Fire Code (IFC) with necessary State amendments. The California Fire Code is updated every three years and includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include: installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

California Occupational Safety and Health Administration

In accordance with the California Code of Regulations, Title 8, Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Fighting Equipment,” the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Local

Sacramento County 2030 General Plan

The Sacramento County General Plan, Public Facilities Element, contains goals and policies related to public facilities (Sacramento County 2019). The following policies are relevant to the project:

- **Policy PF-54.** Require new development to install fire hydrants and associated water supply systems which meet the fire flow requirements of the appropriate fire district.
- **Policy PF-55.** New development shall provide access arrangements pursuant to the requirements of the California Fire Code.
- **Policy PF-59.** Alternative methods of fire protection and access must be instituted if access is reduced to emergency vehicles.

3.15.2 Environmental Setting

Fire Protection

The Sacramento Metropolitan Fire District provides fire protection and emergency rescue services in unincorporated Sacramento County, including the project site. Sacramento Metropolitan Fire Station No. 55 is located at 7776 Excelsior Road, approximately 0.5 miles west of the project site, and Sacramento Metropolitan Fire Station 58 is located at 7250 Sloughhouse Road, approximately 2.94 miles east of the project site (Sacramento Metropolitan Fire District 2024).

Police Protection

The Sacramento County Sheriff's Central District 6 is responsible for providing police protection services to the Vineyard community, including the project site. The station for this district is the Florin Station, located at 7000 65th St, Sacramento, California, approximately 9.1 miles west of the project site (Sacramento County Sheriff's Office 2024).

Schools

The project site falls within Elk Grove Unified School District. The closest schools to the project site are Arnold Adreani Elementary School and Sheldon High School, which are located approximately 3.25 miles west and 4.58 miles southwest of the project site, respectively (Elk Grove Unified School District 2024).

Parks and Other Public Facilities

There are eight parks and recreational facilities located within a 5-mile radius of the project site, which are documented in Table 3.16-1 of Section 3.16, “Recreation”. These facilities are owned and managed independently by Southgate Recreation and Park District, Cordova Recreation and Park District, and private owners. The closest park to the project site is Gene W Andal Park, which supports community recreational opportunities and is also a habitat preserve. It is cared for under a private maintenance agreement between the Sacramento County Department of Regional Parks and Sacramento Area Modelers, Inc. (Sacramento County 2009).

3.15.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

Potential impacts on public services were evaluated based upon the likelihood of the project’s activities to contribute to an increased need for public services in the area, or otherwise interfere with or alter existing public services to the extent that new public services facilities would need to be constructed or altered.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact related to public services if it would:

- 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
    - Police protection
    - Schools
    - Parks
    - Other public facilities

Impact Analysis

Impact 3.15-1. Would the project 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 (including Fire Protection, Police Protection, Schools, Parks, or Other Public Facilities)?

The project's construction, operation, and maintenance would not significantly affect public services to the extent that new public service facilities would need to be constructed, existing facilities would need to be physically altered, or new personnel would need to be hired to support those services. Discussions for each of the public services identified in the threshold of significance are provided below.

a) Fire Protection

As discussed in EIR Section 3.14, "Population and Housing," the project would not result in unplanned population growth, and would therefore not increase demand for fire protection services. Construction, operation, and maintenance activities associated with the project could increase demand for fire protection services, as workers would be on site both during construction and operations. However, compliance with all applicable regulations would minimize the risk of fire to the extent that no new fire protection service facilities would need to be constructed or expanded.

The expected number of construction workers onsite daily would vary by construction phase, with an expected daily average of 13 workers and a peak of 15 daily workers for the initial construction phase (site preparation) to up to a daily average of 219 workers and a maximum of 263 daily workers during the main construction phase (building/infrastructure construction). During operations, one regular onsite employee may be required for approximately half the work week, and some personnel may visit the site to monitor, maintain, and if needed, repair the system as needed. Photovoltaic (PV) panels may be periodically washed with water during project operation, as needed. To conservatively estimate potential panel washing operational water use, it is estimated that solar panels would be washed once per year in case of excessive soiling. As described in Section 3.14, the developer is expected to hire local construction and maintenance staff. Therefore, the project's workforce would not contribute to a substantial increase in population and would not necessitate the construction of new fire protection facilities or hiring of new fire response personnel. The construction contractor would implement onsite safety training to prevent accidental fires during construction, and permanent staff would likewise be trained in fire prevention. Additionally, upon completion of the project the contractor is required to provide an Emergency Response Plan for the project onsite and to local emergency responders that outlines emergency actions and responsibilities during various emergency scenarios. The contractor is responsible to provide training to the fire department on the plan.

While project construction and operations could lead to a marginal increase in demand for fire protection services, this increase would be minor, and the project would not affect the Sacramento Metropolitan Fire District's ability to respond to or fight fires. Additionally, the project facilities would be constructed up to all relevant fire protection codes and would comply with the policies of the Sacramento County General Plan, Public Facilities element, including Policies PF-54 and PF-55. Specifically, the BESS storage system would follow the latest fire protection safety codes including a 10,000-gallon water tank located near the BESS facility. The fire protection safety codes related to these types of facilities include fire testing, setbacks and spacing to prevent potential fires from spreading, and mitigation and suppression system requirements such as a battery management system and deflagration safety systems. Therefore, the impact on fire protection would be **less than significant.**

b) Police Protection

Police protection service in the project area is provided by the Sacramento County Sheriff's Department. The project could increase the need for police protection during construction, maintenance, and operations, as workers would be on site during those times. The expected number of construction workers onsite daily would vary by construction phase, with an expected daily average of 13 workers and a peak of 15 daily workers for the initial construction phase (site preparation) to up to a daily average of 219 workers and a maximum of 263 daily workers during the main construction phase (building/infrastructure construction). During operations, one regular onsite employee may be required for approximately half the work week, and some personnel may visit the site to monitor, maintain, and if needed, repair the system as needed. PV panels may be periodically washed with water during project operation, as needed. To conservatively estimate potential panel washing operational water use, it is estimated that solar panels would be washed once per year in case of excessive soiling. The number of workers onsite during construction and operations is not anticipated to substantially increase demand for police services such that new facilities would need to be constructed, or new law enforcement personnel would need to be hired.

The entire project site would be fenced with a 6-foot security fence to restrict access to authorized personnel only and the proposed substation would have a 10-foot security fence along its perimeter. Fencing these facilities would improve safety, isolate electrical equipment, protect onsite improvements from theft and vandalism, and minimize potential conflicts with surrounding land use. As stated in Chapter 2, "Project Description," the project may include safety lighting and permanent lighting on the substation, entrances to the arrays, and certain array- or BESS-related equipment such as medium voltage combining switchgear. 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 require the construction of new police protection facilities or the expansion of existing police protection facilities. Based on the relatively

small number of temporary and permanent workers expected to staff the site during construction and operations, and the security features discussed above, the project would have a **less than significant** impact on police protection.

c) Schools

The project site is within Elk Grove Unified School District. There are no schools within the immediate area – the closest schools are located over three miles away from the project site boundary, as stated above in the "Environmental Setting" section. The project would construct and operate a PV solar power and BESS facility, which would not necessitate the construction of new school facilities on site or nearby. Additionally, as stated in Section 3.14, "Population and Housing," the project would not result in unplanned population growth, and would therefore not necessitate the expansion of existing school facilities in the community. The project would not require school facilities on site and would not generate new students in the community. Therefore, there would be **no impact** to schools.

d) Parks

As stated in section 3.16, Recreation, the project would not result in substantial increased usage of local parks and recreational facilities such that it would degrade them or accelerate their degradation. Additionally, there would be no unplanned population growth with the project which would necessitate the construction of new parks or expansion of existing parks. Therefore, there would be **no impact** to parks.

e) Other Public Facilities

Based on the discussion above, and the findings of Chapter 3.14, "Population and Housing," there would be no unplanned population growth with the project, and thereby would not affect the current demand for use of other public facilities within the area. Construction workers would be on site temporarily for the approximate eighteen month to two-year construction period. During operations, one regular onsite employee may be required for approximately half the work week, and some personnel may visit the site to monitor, maintain, and if needed, repair the system. PV panels may be periodically washed with water during project operation, as needed. To conservatively estimate potential panel washing operational water use, it is estimated that solar panels would be washed once per year in case of excessive soiling. The number of workers onsite during construction and operations would not substantially increase demand for public services or local public facilities such that new public facilities would need to be constructed. Therefore, **no impact** would occur to other public facilities.

3.16 Recreation

This section identifies and evaluates impacts related to recreation in the context of the project. It includes the regulatory and environmental setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment.

In response to the Notice of Preparation, the Southgate Recreation and Park District provided a comment letter that indicated that the Southgate Recreation and Park District has long-term plans to construct bicycle and pedestrian trails along the Laguna Creek corridor. SMUD will take any information obtained in coordination with the District into account when designing the powerline crossings of Laguna Creek to ensure the plans for a bicycle and pedestrian trail are not adversely affected by the project.

3.16.1 Regulatory Setting

Federal

There are no federal statutes, regulations, plans, or policies governing recreation that are applicable to this project.

State

There are no State statutes, regulations, plans, or policies governing recreation that are applicable to this project.

Local

Sacramento County 2030 General Plan

The following policies from the "Open Space" element of the Sacramento County General Plan may be applicable to the project (Sacramento County 2017):

- **Policy OS-1.** Actively plan to protect, as open space, areas of natural resource value, which may include but are not limited to wetlands preserves, riparian corridors, woodlands, and floodplains associated with riparian drainages.
- **Policy OS-2.** Maintain open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement and sustain ecosystems.

3.16.2 Environmental Setting

Recreational opportunities within Sacramento County include regional parks, city parks, state parks, hiking trails, privately operated sports and amusement facilities, and other facilities. There are no recreational facilities within the project site. Gene W. Andal Park is located approximately 0.5 miles west of the project site boundary.

Table 3.16-1 provides information on the closest recreation facilities to the project site, excluding the small community parks located within the neighborhoods adjacent to the project site. As seen in this table, a wide variety of recreation facilities are available near the project site.

Table 3.16-1. Local Recreational Facilities

Recreational Facility	Managing Agency	Approximate Distance from the Project Site
Gene W. Andal Park	Under private maintenance agreement	0.5 miles
Dunmore Park Preserve	Southgate Recreation and Park District	1.1 miles
Khaira Walking Trail	Southgate Recreation and Park District	1.5 miles
Little Hawke Park	Southgate Recreation and Park District	1.6 miles
Silver Leaf Park	Southgate Recreation and Park District	2.4 miles
Calvine Crossing Park	Southgate Recreation and Park District	2.5 miles
Ted Klein Park	Southgate Recreation and Park District	2.8 miles
Kavala Ranch Park	Cordova Recreation and Park District	3.0 miles

Sources: Sacramento County (2009), Southgate Recreation and Park District (2022), and Cordova Recreation and Park District (2024)

3.16.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The project's potential impacts on recreation were analyzed using the thresholds of significance described in this section. Recreation facilities within 5 miles of the project were evaluated for potential impacts.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact related to recreation if it would:

- 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; or

- include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impact Analysis

Impact 3.16-1. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

As discussed in Section 3.14, "Population and Housing", the project would not result in unplanned population growth, and would therefore not result in a substantial increase in use of the recreational facilities listed in Table 3.16-1 and would not result in their physical deterioration.

The closest parks to the project site are Gene W. Andal Park and the Dunmore Park Preserve. The project would not result in any long-term restrictions to access or circulation and would therefore not restrict the use of these parks or any of the parks listed in Table 3.16-1.

During scoping, the Southgate Recreation and Park District provided a comment letter that indicated their long-term plans to construct bicycle and pedestrian trails along the Laguna Creek corridor. Additional details about this project were not available online, and SMUD attempted to reach out to the Southgate Recreation and Park District for more information. SMUD will take any information obtained in coordination with the District into account when designing the powerline crossings of Laguna Creek to ensure the plans for bicycle and pedestrian trails in the Laguna Creek corridor are not adversely affected by the project. Therefore, **no impact** would occur.

Impact 3.16-2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The project would not include the construction of any new recreational facilities or the expansion of existing recreational facilities. As described in Section 3.14, Population and Housing, the project would not result in a net growth in population in Sacramento County and would therefore would not generate increased demand for recreational facilities to maintain consistency with Sacramento County General Plan Policy OS-2. Therefore, the project would not require the construction or expansion of recreational facilities, and **no impact** would occur.

3.17 Transportation

This chapter describes potential transportation impacts associated with the proposed project. The impact analysis examines the vehicular, transit, bicycle, pedestrian, and goods movement (by truck) components of the transportation system in the project vicinity. To provide context for the impact analysis, this chapter begins with a discussion of the regulatory framework, which provides part of the basis for impact significance thresholds used in the impact analysis. Next, the environmental setting describes the existing and physical operational conditions for the transportation system. The section concludes with significant criteria, impact analysis findings, and recommended mitigation measures.

3.17.1 Regulatory Setting

Federal

There are no federal plans, policies, regulations, or laws related to transportation and circulation which are applicable to the proposed project.

State

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System. Federal highway standards are implemented in California by Caltrans. Any improvements or modifications to the State Highway System would need to be approved by Caltrans.

Caltrans' Local Development – Intergovernmental Review Program Interim Guidance (Caltrans, December 2020) provides guidance on the evaluation of traffic impacts to State highway facilities. The document recommends that CEQA reviewers comment on vehicle miles traveled (VMT), "applying local agency thresholds or absent those, thresholds recommended in adopted CEQA Guidelines or Governor's Office of Planning and Research's (OPR's) approved Technical Advisory."

Senate Bill 743

Governor Brown signed Senate Bill (SB) 743 in September 2013, which created a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 required OPR to amend the CEQA Guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts, as well as recommend methodologies and significance thresholds. SB 743 does not change the discretion that lead agencies have to select methodology or define significance thresholds.

Under SB 743, the focus of transportation analysis essentially shifted from the social inconvenience of traffic congestion to adverse physical effects associated with vehicular travel demand. Measurements of transportation impacts may include total VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. VMT has long been a common metric to use to measure travel demand. A VMT is one vehicle traveling

on a roadway for one mile. Many communities have been estimating and developing policy related to VMT for years, including estimates and goals for VMT per person, VMT per employee, or other methods of normalization. SB 743 directs revisions to the CEQA Guidelines that would create criteria for assessing travel demand, such as "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated" (PRC Section 21099[b][1]). Once the CEQA Guidelines went into effect on July 1, 2020, delay related to congestion is no longer considered a significant impact under CEQA (OPR 2016).

California Air Resources Board

The California Air Resources Board (CARB) has guidance for VMT thresholds in the CARB *2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals* (January 2019). This document provides recommendations for VMT reduction thresholds that would be necessary to achieve the state's GHG reduction goals and acknowledges that the sustainable communities strategies (SCS) targets alone are not sufficient to meet climate goals. CARB concluded that a 14.3-percent reduction in total VMT per capita and a 16.8-percent reduction in light-duty VMT per capita over then-current conditions (2015-2018) was needed to meet these goals.

Regional and Local

Sacramento County 2030 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). Its intent is to invest in all travel modes so that residents and workers have access to more than one realistic and efficient transportation alternative. The General Plan directs integrated and balanced investment in the transportation system: roadway, public transit system, bicycling and pedestrian infrastructure. The General Plan's Circulation Element consists of the Transportation Plan and Transportation Policy Plan.

The following General Plan policy related to transportation and circulation pertain to the proposed project. The associated environmental impact related to this policy is 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 includes proposed enhancements to bicycle and pedestrian facilities near the intersections of Florin Road, Excelsior Road, Gerber Road, and Grant Line Road (Sacramento County 2022). These enhancements include a recommended Class II bicycle lane along Florin Road and Gerber Road to improve connectivity between residential and rural areas. Additionally, new Class II bicycle lanes and pedestrian pathways are proposed for segments of Grant

Line Road near its intersections with Florin Road and Gerber Road to facilitate safer multimodal access. These improvements aim to enhance safety, provide alternative transportation options, and promote active transportation within this region.

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 Sacramento County 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 Sacramento County Department of Transportation may require additional analysis of other roadway elements such as turn pocket queuing, drive-thru queuing, traffic signal warrants, traffic safety, neighborhood cut-through traffic, truck impacts, access control, and phasing analysis. The County's *Transportation Analysis Guidelines* (Sacramento County 2020) provide the requirements and guidance for preparing an LTA.

The *Transportation Analysis Guidelines* have been updated to reflect SB 743 and reflected in the CEQA Guidelines Section 15064.3. As noted in the County's guidelines, the intent of SB 743 is to bring CEQA transportation analyses into closer alignment with other statewide policies regarding greenhouse gases, complete streets, and smart growth. Using vehicle miles travelled (VMT) as a performance measure instead of LOS is intended to discourage suburban sprawl, reduce greenhouse gas emissions, and encourage the development of smart growth, complete streets, and multimodal transportation networks. The current County guidelines provide methodologies for transportation engineers and planners to conduct CEQA transportation analyses for land development and transportation projects in compliance with SB 743. Notably, the County guidelines include the following screening criteria for projects that are expected to result in less-than-significant VMT impacts:

[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.

- Projects generating less than 237 average daily traffic (ADT).
- Local-serving public facilities/services, including utility facilities.[2]

3.17.2 Environmental Setting

This section provides a contextual background to Sacramento County's transportation system in the project vicinity.

Existing Roadways

Local access to the project site would be from Florin and Eagles Nest roads. Access to components of the PV solar energy generating facility would be controlled through security gates at the site entrances. Gate-restricted access points would be used during construction and operation. Roadways within one mile of the project site are shown on Exhibit 3.17-1 and include:

Florin Road

Florin Road is an east-west arterial road in Sacramento County. It typically features two to four lanes, accommodating traffic in both directions. The road extends from the western parts of Sacramento, crossing major north-south routes such as SR 99 and Elk Grove Florin Road, and continues eastward past Bradshaw Road. In the eastern segments, particularly between Eagles Nest Road and Excelsior Road, the area becomes more rural, and the road may narrow. Florin Road serves as a significant connector between residential, commercial, and rural areas, linking to major highways like SR-99.

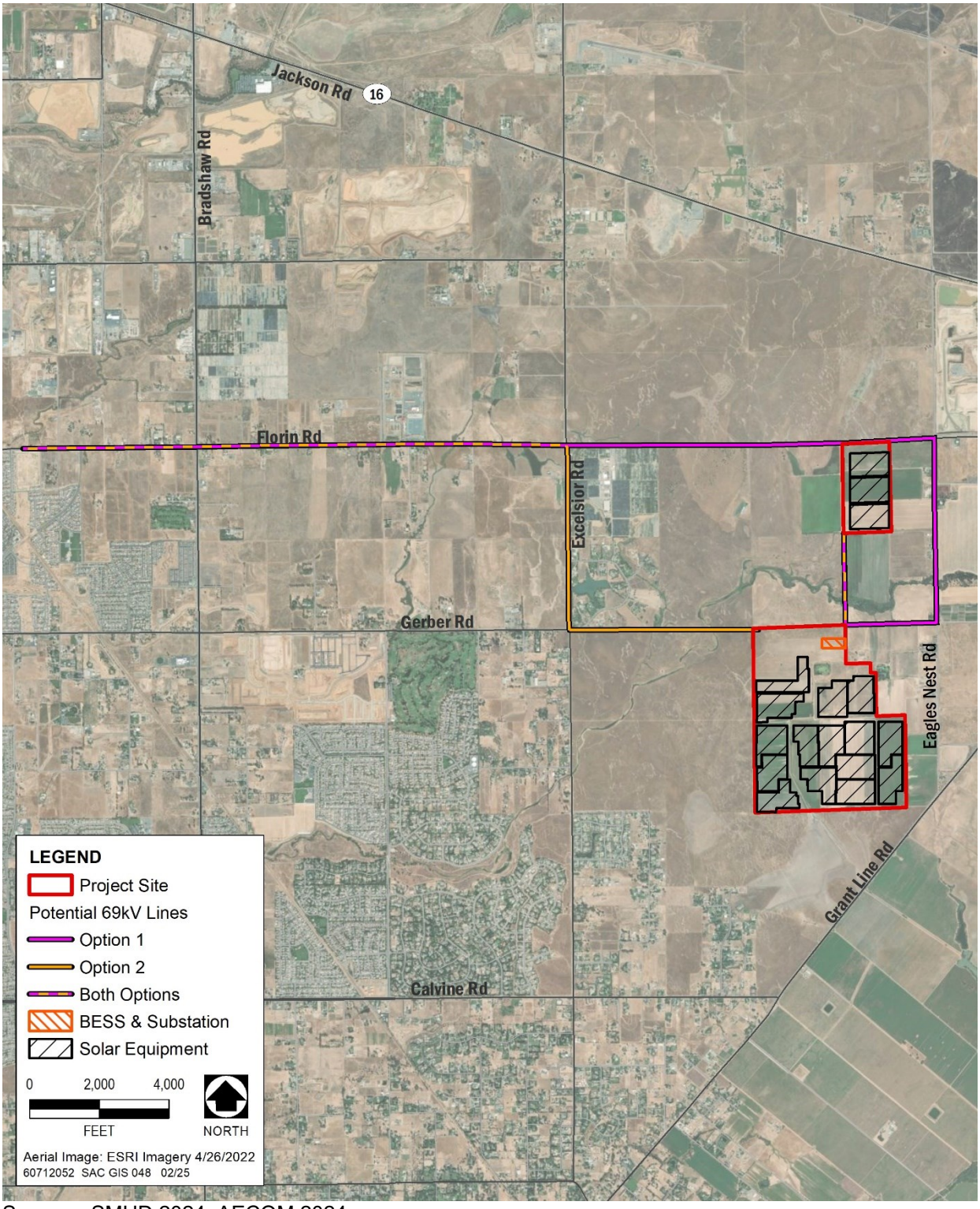
Excelsior Road

Excelsior Road runs north-south in Sacramento County, generally comprising two lanes. It intersects with several major east-west roads, including Florin Road and Gerber Road, facilitating access between different county regions. The road primarily serves local traffic, connecting rural and suburban areas, and does not directly link to major highways.

Gerber Road

Gerber Road is an east-west roadway in Sacramento County, typically featuring two lanes. It stretches from Elk Grove Florin Road in the west to Grant Line Road in the east, intersecting major north-south routes like Bradshaw Road and Excelsior Road. Gerber Road serves as a connector between residential and rural areas, providing access to local communities and acting as an alternative route parallel to other major east-west corridors.

[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.



Sources: SMUD 2024, AECOM 2024

Exhibit 3.17-1: Roadways in the Project Vicinity

Eagles Nest Road

Eagles Nest Road is a north-south route in the eastern part of Sacramento County, generally consisting of two lanes. It connects Florin Road to the north with Jackson Road (SR-16) to the south. The road traverses predominantly rural areas, providing access to agricultural lands and serving local traffic. Eagles Nest Road does not directly connect to major highways but links significant local roads within the county.

Grant Line Road

Grant Line Road is a significant north-south and east-west route forming a partial loop around the southeastern periphery of the Sacramento metropolitan area. The road varies between two to four lanes, accommodating traffic in both directions. It intersects with major roads such as Jackson Road (SR-16), Douglas Road, and Calvine Road, and provides access to SR-99 near Elk Grove. Grant Line Road serves as a crucial connector between suburban and rural areas, facilitating movement around the outskirts of the metropolitan region and linking to several major highways.

Bikeways, Pedestrians, and Transit

No bus stops, pedestrian, or bicycle facilities are located near the project site (Sacramento County 2022).

3.17.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

During the approximately 18-month to two-year construction period, the proposed project would require daily trips for the commuting of the construction workforce, movement of construction equipment, and hauling. The number of workers expected onsite during the construction period would vary by construction phases, averaging approximately 13 to 219 workers per day, with a peak of 263 workers during the building/infrastructure construction phase. Deliveries of equipment and supplies to the site would also vary throughout the construction period, with an average of 1 to 64 daily one-way trips, peaking at 64 daily trips during the site preparation phase. Haul truck trips would fluctuate across construction phases, with an expected range of 1 to 64 daily one-way trips, also peaking at 64 daily trips during the site preparation phase. Parking for project-related vehicles would be provided on-site throughout construction, with the parking areas being relocated as needed to align with new construction phases.

The project would generate minimal operational traffic, with daily activities involving one regular onsite employee for half the week and occasional visits by personnel for monitoring, maintenance, or repairs. Routine site maintenance includes vegetation management, road upkeep, debris removal, and agricultural activities such as grazing and irrigation. Pickup trucks and flatbeds would be used regularly, with occasional heavy-haul equipment for infrastructure repairs or replacements, such as inverters every 10 years. For annual solar panel washing, onsite well water would be used and no water

would be sourced from offsite locations. Non-hazardous and hazardous waste would be collected and disposed of per regulations. Preventive maintenance kits and critical spare parts would be stored on-site, with other materials transported from remote warehouses as needed. Operational traffic impacts would remain low, with periodic increases for specific maintenance tasks or equipment deliveries.

Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, the proposed project would result in a potentially significant impact on traffic or circulation if it would:

- conflict with adopted 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.

Impact Analysis

Impact 3.17-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Construction

Regionally, access to the project site would be provided primarily by U.S. Highway 50. Local access to the project site would be from Florin and Eagles Nest roads. 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 64 daily construction-related truck trips for delivery of materials and hauling would be spread over an eight-hour workday during the peak period of construction in terms of trip generation, which is during the site preparation phase. In addition, a maximum of 263 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 654 daily vehicle and truck trips added each day to local roadways during the peak trip-generating phase of construction. If the equipment and material 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. It is assumed that the worker trips will be distributed along area roadways, and the volume on any single roadway segment will fall below 100 peak hour vehicle trip-ends, thereby avoiding the need for a more detailed focused Local

Transportation Analysis (LTA) based on this threshold beyond what is provided in this analysis. Furthermore, work hours during the construction season would likely be longer than 8 hours to make maximum use of each workday, thus worker arrival and departure would likely typically occur before and after main commuter hours.

Furthermore, existing traffic volumes along the area roadways range from 2,124 to 5,242 total trips per day (Sacramento County 2024). Project construction trips represent a short-term increase in daily traffic of less than 30 percent on any area roadways. The effect on daily and peak-hour traffic volumes would be temporary, limited to the estimated 18-month to two-year construction period, and the additional vehicles would not substantially alter existing roadway capacity. Given the limited duration of construction activities, 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 Sacramento County's *Transportation Analysis Guidelines*, the LOS C or D capacity for a two-lane, rural roadway with access and characteristics similar to the roadways surrounding the project site, 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 project area roadways would remain 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, the County would address the issue in terms of General Plan consistency rather than as an environmental impact subject to CEQA analysis and mitigation.

No bus stops, pedestrian, or 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). Roadways in the vicinity of the project site are rural roadways that do not have designated bicycle lanes. However, under normal conditions, cyclists share the roadways with vehicular traffic. Given the lack of dedicated bicycle lanes and the rural nature of the roadways in the project vicinity, cyclists should 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 operational traffic for the project is expected to be minimal. It would primarily consist of light-duty vehicle trips associated with one regular onsite employee, required approximately half the work week, and occasional visits by personnel for monitoring, maintenance, repairs, and vegetation management. Additional trips would occur for activities such as waste disposal, with non-hazardous and hazardous waste being collected and disposed of by local waste disposal or recycling companies. Maintenance activities would utilize light vehicles such as pickup trucks, flatbeds, forklifts, and loaders, while large, heavy-haul transport equipment may occasionally be required for the repair

or replacement of major components. The overall operational traffic would generate a low volume of daily trips and is not expected to significantly impact traffic volumes on the surrounding roadways. This change does not have the potential to substantially increase traffic volumes and adversely impact the local or regional circulation system.

Sacramento County's policies to encourage bicycle, pedestrian, and transit use are related to other types of development – residential, office, commercial, and civic uses where patrons, residents, and employees can be encouraged to use alternatives to a private vehicle to reach daily destinations. Such policies are not relevant to the project, particularly considering the anticipated extremely low level of operational trips.

Due to the limited changes resulting from project operations, the impact on traffic circulation, transit, bicycle, and pedestrian facilities would be **less than significant**.

Impact 3.17-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b).

Construction and Operation

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. Operational traffic for the project is expected to be minimal, with approximately 1 regular onsite employee visiting 2– to 3 days per week and occasional visits by maintenance, monitoring, and repair personnel. Equipment and supply use would involve light-duty vehicles such as pickup trucks, flatbeds, and forklifts, with infrequent heavy-haul transport trips, occurring every 10 years for inverter replacements. Waste disposal trips are anticipated to occur periodically, such as weekly or monthly, and annual panel washing would be infrequent, estimated to occur for up to 3 weeks per year. Overall, the project is expected to generate only a few daily trips, primarily from light-duty vehicles. 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 SMUD's 69 kV distribution lines. The project meets the screening criteria as a local-serving public utility and solar energy facility.

Because VMT analysis is intended to capture the long-term impacts of a proposed project, construction activities are not typically subject to VMT analysis. As a result, no analysis of construction VMT is warranted (Sacramento County 2020, page 10). Moreover, the project's operational characteristics meet the above screening criteria as both a small project and a local-serving utility, and thus detailed CEQA transportation analysis of operational VMT is not required. Therefore, consistent with Sacramento County's *Transportation Analysis Guidelines*, there is no conflict with CEQA Guidelines Section 15064.3 and the VMT impact associated with the project would be **less than significant**.

While VMT is now the preferred methodology for assessing transportation impacts under CEQA, other programs, plans, ordinances and policies related to LOS are considered during a project's approval phase to the extent that such standards are present in applicable local plans (e.g., General Plan) and guidelines. Because of the limited number of trips generated by project operations, no further analysis is warranted for purposes of this document as relates to County plans, policies, and guidelines that relate to LOS.

Impact 3.17-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Construction

Primary access to the project site would be from Eagles Nest and Florin roads. As described above, access to components of the solar field would be controlled through security gates at the site entrances. Gate-restricted access points would be used during construction and operation. The project does not include any permanent changes to the geometry of the area roadways. As a result, no impact would result from project construction or operations.

Temporary facilities would be developed on-site during construction to facilitate the construction process. These facilities may include construction trailers, parking areas, material receiving / storage areas, construction power service, recycling / waste handling areas, and others. However, these facilities and associated construction activities would be limited to the project site and are not expected to directly impact surrounding public roadways.

While project construction would introduce additional traffic movements and oversized haul vehicles to the local road network, construction traffic is common throughout Sacramento County and is not considered an "incompatible use." However, given the scale of the project and rural setting in which the project would be constructed, the temporary addition of oversize vehicles, haul trucks and worker vehicles could increase traffic hazards, and the resulting impact would be **potentially significant**.

To address this potentially significant impact, Mitigation Measure 3.17-1 below, requires a traffic control plan to be prepared in accordance with the California Manual of Traffic Control Devices. Pending final project design, the requirement for a traffic control plan

may be triggered by the Sacramento County encroachment permit process if any portion of Florin or Eagles Nest roads rights-of-way would be temporarily occupied or altered during construction. However, if no encroachment permit is required, the project would still be subject to a traffic control plan to address the potentially significant impact and to provide consistency with the County General Plan Policy CI-10, which requires land development projects to mitigate adverse impacts on local and regional roadways.

Mitigation Measures

Mitigation Measure 3.17-1. Prepare and Implement a Traffic Control Plan.

To address potential traffic hazards during construction, prior to the commencement of construction or demolition activities, SMUD or its construction contractor shall prepare a traffic control plan for review and approval by Sacramento 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 on roadways adjacent to project site and project activities. In addition, the traffic control plan would provide for notification of emergency responders regarding the planned construction activities.

Significance after Mitigation

Implementation of Mitigation Measure 3.17-1, Prepare and Implement a Traffic Control 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. 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 have one onsite employee for approximately half of the work week. Periodic maintenance and panel washing activities would not generate substantial traffic or involve conflicts on adjacent roadways that would result in traffic hazards. Therefore, the impact during project operations would be **less than significant**.

Impact 3.17-4: Result in inadequate emergency access.

Construction

Temporary facilities would be developed at the project site during construction to facilitate the construction process as described above. Construction impacts would generally be limited to onsite areas, and would not directly impact the area's public roadways or substantially impede access to or from nearby properties. However, construction activities for the proposed project could reduce emergency access to roadways in the project

vicinity. Slow-moving trucks entering and exiting the project sites along roadways in the vicinity of the project site could delay the movement of emergency vehicles. As a result, the impact of the project during construction would be **potentially significant**.

Mitigation Measures

Implement Mitigation Measure 3.17-1. Prepare and Implement a Traffic Control Plan.

Significance after Mitigation

Implementing Mitigation Measure 3.17-1, Prepare and Implement a Traffic Control Plan, would reduce the potentially significant impact of project construction activities on emergency access to a **less-than-significant** level because the traffic control plan would be used to develop detours to ensure acceptable traffic flow through and/or around the construction zone, minimize impacts on emergency access by providing alternate routes for all traffic users, and minimize traffic congestion.

Operation

Access to the project site would be from Eagles Nest and Florin roads. The project does not include any permanent changes to the public roadway network. Once constructed, the site would be operating with a small number of additional trips, based on worker occupancy and limited anticipated operations and maintenance activities, and no changes over baseline conditions are anticipated. This impact is **less than significant**.

3.18 Tribal Cultural Resources

This section describes the environmental and regulatory setting for Tribal Cultural Resources (TCRs) in the project area, identifies and analyzes impacts to TCRs from implementation of the Oveja Ranch Solar project, and, if necessary, recommends mitigation measures to reduce or eliminate significant impacts. TCRs are separate and distinct from cultural resources, which are discussed in Section 3.5, “Cultural Resources”.

This chapter reflects the Tribal methods of identification of TCRs and includes Tribal values and contemporary Tribal community background below, in the Environmental Setting section.

TCRs, as defined by Assembly Bill (AB) 52, Statutes of 2014, in Public Resources Code (PRC) Section 21074, are sites, features, places, cultural landscapes, sacred places and objects, with cultural value to a Tribe. TCRs provide a background for religious understanding, traditional stories, knowledge of resources (such as varying landscapes, bodies of water, animals, and plants), and self-identity.

A Tribal Cultural Landscape is defined as a geographic area (including both cultural and natural resources and the wildlife therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. Unanticipated Native American human remains would also be considered a TCR and are therefore analyzed in this section.

3.18.1 Regulatory Setting

Federal

There are no federal statutes, regulations, plans, or policies governing Tribal Cultural Resources that are applicable to this project.

State

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on “TCRs.” PRC Section 21084.2 establishes that “[a] project with an effect that may cause a substantial adverse change in the significance of a Tribal Cultural Resource is a project that may have a significant effect on the environment.” PRC Section 21074 states:

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:

i.) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

ii.) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a Tribal Cultural Resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a Tribal Cultural Resource if it conforms with the criteria of subdivision (a).

Assembly Bill (AB) 52

AB 52 (effective July 1, 2015) added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to CEQA, relating to consultation with California Native American Tribes, consideration of TCRs, and confidentiality. AB 52 provides procedural and substantive requirements for lead agency consultation with California Native American Tribes and consideration of effects on TCRs, as well as examples of mitigation measures to avoid or minimize impacts to TCRs. AB 52 establishes that if a project may cause a substantial adverse change in the significance of a TCR, that project may have a significant effect on the environment. Lead agencies must avoid damaging effects to TCRs, when feasible, and shall keep information submitted by Tribes confidential.

AB 52 requires a lead agency to consult with California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the proposed project, if the Tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the Tribe requests consultation. PRC Section 21080.3.1(d) states that within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead

agency shall provide formal notification to the designated contact of, or Tribal representative of, traditionally and culturally affiliated California Native American Tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project location and its location, the lead agency contact information, and a notification that the California Native American Tribe has 30 days to requests consultation pursuant to this section.

Health and Safety Code, Sections 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 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be those of a Native American, the coroner must contact Native American Heritage Commission (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 California Native America Graves Protection and Repatriation 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 California Native America Graves Protection and Repatriation 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 California Native America Graves Protection and Repatriation 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 (PRC Section 5097.9) applies to both State and private lands. The California Native American Historical, Cultural, and Sacred Sites Act requires, upon discovery of human remains, that construction or excavation activity cease and that the County Coroner be notified. If the remains are those of a Native American, the coroner must notify the NAHC, which notifies (and has the authority to designate) the most likely descendants of the deceased. 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.

Public Resource Code Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American human burials falls within the jurisdiction of the NAHC. Section 5097.5 of the Code 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.

Local

Sacramento County 2030 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-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 Native American Heritage Commission 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-157.** Monitor projects during construction to ensure crews follow proper reporting, safeguards, and 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.

3.18.2 Environmental Setting

The project is situated within the lands traditionally occupied by the Nisenan, or Southern Maidu and the Eastern Miwok. The Eastern Plains Miwok specifically, according to Levy. The Eastern Plains Miwok belong to their own language group and although a common language was spoken among the Plains Miwok they were not a unified people but several independent political nations that shared a common language and culture (Levy 1978, p. 398). According to Wilson and Towne (1978) few native villages are thought to have existed on the valley plain between the foothills and the Sacramento River with the nearest recorded village site (well outside of the project area or the quarter mile buffer)

being the Nisenan historic era encampment *Kadema* (CA SAC 192). The project site occurs in a region closest to this border territory of the Nisenan and Eastern Plains Miwok.

The language of the Nisenan, which includes several dialects, is classified within the Maiduan family of the Penutian linguistic stock (Kroeber 1925). The western boundary of Nisenan territory was the western bank of the Sacramento River and the area between present-day Sacramento and Marysville. In the Sacramento Valley, the tribelet, consisting of a primary village and a few satellite villages, served as the basic political unit (Moratto 1984). Valley Nisenan territory was divided into three tribelet areas, each populated with several large villages (Wilson and Towne 1978), generally located on low, natural rises along streams and rivers or on slopes with a southern exposure.

Euro-American contact began with infrequent excursions by Spanish explorers and Hudson Bay Company trappers traveling through the Sacramento and San Joaquin valleys in the early 1800s. In general, Nisenan lifeways remained stable for centuries until the early to middle decades of the nineteenth century. With the coming of Russian trappers and Spanish missionaries, cultural patterns began to be disrupted as social structures were stressed. An estimated 75 percent of the Valley Nisenan population died in the malaria epidemic of 1833 (Wilson and Towne 1978). With the influx of Europeans during the Gold Rush era, the population was further reduced by disease and violent encounters with the miners.

Today, Nisenan descendants and other Tribes are reinvesting in their traditions and represent a growing and thriving community that is actively involved in defining their role as continuing stewards of their ancestral lands including the identification of TCRs. TCRs provide the backdrop to spiritual understanding, traditional stories, knowledge of resources such as varying landscapes, bodies of water, animals and plants, and self-identity. Knowledge of place is central to the continuation and persistence of culture, even if former Nisenan and Miwok occupants live removed from their traditional homeland. Consulting Tribes view these interconnected sites and places as living entities; their associations and feelings persist and connect with descendant communities.

Records Searches and Consultation

Records Search

A cultural records search was conducted by the North Central Information Center (NCIC), of the California Historical Resources Information System, California State University, Sacramento on January 3, 2024 (File No. SAC-24-5). The NCIC, an affiliate of the California Office of Historic Preservation (OHP), is the official state repository of cultural resource records and studies for Sacramento County.

The search included the project site and a 0.25-mile radius. The results were used to determine whether known cultural resources have been recorded at or adjacent to the project site, and to assess the cultural sensitivity of the area. The records search included reviews of maps listing previously conducted cultural resource studies in the area. Other resources reviewed included the National Register of Historic Places, California Register

of Historical Resources, the California Inventory of Historic Resources, California Historical Landmarks, California Points of Historical Interest, the Historic Property Data File, and historic General Land Office (GLO) maps.

Site records and previous studies were accessed for the project Area of Potential Effect (APE) and a 0.25-mile radius in the Buffalo Creek, California USGS 7.5-minute quadrangle. The following references were also reviewed:

- National Register of Historic Places
- California Register of Historical Resources
- OHP Historic Property Data File (April 2012)
- OHP Five Views: An Ethnic Historic Site Survey for California (OHP 1988)
- California State Historical Landmarks (OHP 1996)
- California Inventory of Historic Resources (California Department of Parks and Recreation 1976)
- California Points of Historical Interest (OHP 1992)
- GLO Plat Maps

The records search indicated that an isolated metal fence post was noted within the project study area, and two ranch/farm complexes and an isolated white earthenware fragment were located within the 0.25-mile search radius outside of the project study area. Eight previous cultural resource studies of pre-contact and historic cultural resources have been conducted within the APE, in addition to five cultural studies within a 0.25-mile radius of the project area.

NAHC Consultation and Sacred Lands File Search

The NAHC was contacted by AECOM on behalf of SMUD. The NAHC responded on January 12, 20. 24, that a search of the Sacred Land Files for the proposed project was negative

Tribal Consultation

CEQA - AB 52

Pursuant to PRC 21090.3.1(b)(1), Tribal notifications were sent out to participating Tribes on January 8, 2024.

On January 16, 2024, Wilton Rancheria confirmed that this project would be located within the Tribe's ancestral and culturally affiliated territory. They requested copies of the final report and recommended that an onsite Tribal Monitor be present for ground disturbing activities. Additionally, they provided a copy of their Inadvertent Discovery Treatment Plan, and requested that it be added to the work protocols. but since this

original request, Wilton Rancheria has indicated that United Auburn Indian Community's (UAIC's) standard unanticipated discoveries mitigation measure could be used instead. This language is included in Mitigation Measure 3.18-1, Inadvertent/Unanticipated TCR Discoveries. Wilton Rancheria has indicated spot monitoring is recommended rather than an onsite Tribal Monitor for all ground disturbing activities. Wilton Rancheria and SMUD met four times to consult on the proposed project and consultation is ongoing.

The UAIC and SMUD met three times to consult on the proposed project. The UAIC also indicated an interest in the project and asked to participate in the field inventory. Jonathan Prout, UAIC certified Tribal Monitor, participated in onsite surveys conducted by AECOM archeologists in 2024 on April 25, April 26, April 27, April 28, and June 10 and provided monitoring logs to SMUD. On July 8, 2024, Anna Starkey, M.A., RPA and UAIC Cultural Regulatory Specialist provided a tribal cultural resources survey write up to include in this EIR. On October 3, 2024, UAIC concluded AB52 consultation for the SMUD Oveja Ranch Solar Project with the understanding that their standard unanticipated discoveries mitigation measure will be included in the TCR chapter. This language is incorporated into Mitigation Measure 3.18-1, Inadvertent/Unanticipated TCR Discoveries.

3.18.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

Analysis Methodology

Information related to TCRs is based on findings reported in the NAHC Sacred Lands File database search, the records search results (NCIC File Number SAC-24-5), as well as the results of Native American consultation under AB 52. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

As mentioned above, on July 8, 2024, Anna Starkey, M.A., RPA and UAIC Cultural Regulatory Specialist provided a tribal cultural resources survey write up. The information provided by UAIC is as follows:

> "An intensive pedestrian survey using 30 meter transects was conducted by UAIC certified Tribal Monitor, Jonathan Prout, accompanied AECOM Archaeologists on April 25th through the 28th, and again on June 10, 2024. A total of 620 acres was surveyed with visibility ranging from 0 to 20% with some areas obscured by heavy vegetation and harvested crops.
>
> The purpose of the UAIC tribal survey was for the identification of tribal cultural resources (TCRs) for the Oveja Ranch Solar Project. Tribal cultural resources can include midden soil, flaked stone artifacts, ground stone, fire-cracked rock, tribal landscapes, significant plants and ecological resources, and cultural features, such as rabbit fences, house pits, or hunting blinds. The Oveja Ranch Solar Project area is located within the Frye Creek corridor, less than 3 miles of two known

indigenous village sites and a vast cultural complex along the Deer Creek and Cosumnes River.

During the survey the ground was closely inspected for evidence of surficial or buried indigenous resources and all areas of rodent or human disturbance, such as disced areas, were carefully scrutinized for the presence of subsurface cultural deposits. Soils ranged from brown to reddish brown; some areas with darker brown silty/gravelly loam. No cobbles or gravels were observed.

No TCRs were observed during the pedestrian survey; no subsurface investigations were conducted or recommended by UAIC."

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the project would result in a potentially significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or
    - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

Impact Analysis

Impact 3.18.1. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?

No unique archaeological resources or TCRs have been identified on the project site and the NAHC Sacred Lands Database search was negative. However, these resources may be encountered during ground disturbing activities (i.e., grading and trenching). Therefore, TCRs may exist at the project site and could be affected by the project. This impact would be **potentially significant**.

Mitigation Measures

Although TCRs have not been identified for this project, the following mitigation measure was provided by UAIC and is intended to address the evaluation and treatment of inadvertent/ unanticipated discoveries of potential TCRs, archaeological, or cultural resources during the project's ground disturbing activities.

Mitigation Measure 3.18-1. Inadvertent/Unanticipated TCR Discoveries.

If any suspected TCRs or resources of cultural significance to UAIC, including but not limited to features, anthropogenic/cultural soils, cultural belongings or objects (artifacts), shell, bone, shaped stones or bone, or ash/charcoal deposits are discovered by any person during construction activities including ground disturbing activities, all work shall pause immediately within 100 feet of the find, or an agreed upon distance based on the project area and nature of the find. Work shall cease in and within the immediate vicinity of the find regardless of whether the construction is being actively monitored by a Tribal Monitor, cultural resources specialist, or professional archaeologist.

A Tribal Representative and SMUD shall be immediately notified, and the Tribal Representative in coordination with the SMUD shall determine if the find is a TCR

(PRC Section 21074) and the Tribal Representative shall make recommendations for further evaluation and treatment as necessary.

Treatment and Documentation:

The culturally affiliated Tribe shall consult with SMUD to (1) identify the boundaries of the new TCR and (2) if feasible, identify appropriate preservation in place and avoidance measures, including redesign or adjustments to the existing construction process, and long-term management, or 3) if avoidance is infeasible, a reburial location in proximity of the find where no future disturbance is anticipated. Permanent curation of TCRs shall not take place unless approved in writing by the culturally affiliated Tribe.

The construction contractor(s) shall provide secure, on-site storage for culturally sensitive soils or objects that are components of TCRs that are found or recovered during construction. Only Tribal Representatives shall have access to the storage. Storage size shall be determined by the nature of the TCR and can range from a small lock box to a Conex box (shipping container). A secure (locked), fenced area can also provide adequate on-site storage if larger amounts of material must be stored.

The construction contractor(s) and SMUD shall facilitate the respectful reburial of the culturally sensitive soils or objects. This includes providing a reburial location that is consistent with the Tribe's preferences, excavation of the reburial location, and assisting with the reburial, upon request.

Any discoveries shall be documented on a Department of Parks and Recreation 523 form within 2 weeks of the discovery and submitted to the appropriate California Historical Resources Information System Information Center in a timely manner.

Work at the TCR discovery location shall not resume until authorization is granted by SMUD in coordination with the culturally affiliated Tribe.

If articulated or disarticulated human remains, or human remains in any state of decomposition or skeletal completeness are discovered during construction activities, the Sacramento County Coroner shall be contacted immediately. Upon determination by the Sacramento County Coroner that the find is Native American in origin, the NAHC shall assign the Most Likely Descendent who shall work with the project proponent to define appropriate treatment and disposition of the burials.

Significance after Mitigation

Implementation of Mitigation Measure 3.5-2 (Halt ground-disturbing activity upon discovery of human remains, see Section 3.5, "Cultural Resources") and Mitigation Measure 3.18-1, Inadvertent/Unanticipated TCR Discoveries would reduce impacts associated with TCRs because they would require the performance of professionally and

Native American accepted and legally compliant procedures for the discovery of previously undocumented significant TCRs, including cessation of construction activities proximate to the discovery and notification of the appropriate Tribal Representative(s). As a result, with implementation of these recommended mitigation measures, the impact on TCRs would be **less than significant with mitigation**.

3.19 Utilities and Service Systems

This section describes the existing utilities and infrastructure onsite and assesses the project's short- and long-term impacts on utilities and service systems. The analysis evaluates whether the project would require the construction of additional water, wastewater, or solid waste treatment or disposal facilities, and its potential impacts on utility services. The section also discusses the addition of the proposed electrical interconnection facilities to the local grid.

3.19.1 Regulatory Setting

Federal

No federal plans, policies, regulation, or laws pertaining to utilities and service systems are applicable to this project.

State

State Water Code

Pursuant to the State Water Code, water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (approximately 980 million gallons) of water annually must prepare and adopt a Urban Water Management Plan (UWMP) and update it every five years. As part of a UWMP, water agencies are required to evaluate and describe their water resource supplies and projected needs over a 20-year planning horizon, water conservation, water service reliability, water recycling, opportunities for water transfers, and contingency plans for drought events.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 created the California Integrated Waste Management Board, now known as CalRecycle. CalRecycle is the agency designated to oversee, manage, and track California's waste generation. CalRecycle provides grants and loans to help cities, counties, businesses, and organizations meet the State's waste reduction, reuse, and recycling goals. CalRecycle promotes a sustainable environment in which these resources are not wasted but can be reused or recycled. In addition to many programs and incentives, CalRecycle promotes the use of new technologies to divert resources away from landfills. CalRecycle is responsible for carrying out waste management programs, primarily through local enforcement agencies.

2022 California Green Building Standards Code

The standards included in the 2022 California Green Building Standards Code (CALGreen Code) (24 CCR Part 11) 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.

CALGreen requires construction projects to recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste or meet a local construction and demolition waste management ordinance (whichever is more stringent).

State Water Resources Control Board

The Porter-Cologne Act requires the California State Water Resources Control Board (State Water Resources) to adopt water quality control plans and set waste discharge requirements (WDRs) for dischargers into surface and groundwaters (Sacramento County 2010). The Central Valley Regional Water Quality Control Board (Regional Water Board) is responsible for administering and enforcing WDRs, permits, and water quality control plans.

Central Valley Regional Water Quality Control Board

The County of Sacramento received a municipal NPDES permit for stormwater discharges from the Central Valley Regional Water Quality Control Board. Under this permit, permittees are required to develop, administer, implement, and enforce a Comprehensive Stormwater Management Program (CSWMP) to reduce pollutants in urban runoff to the maximum extent practicable (Sacramento County 2010). The CSWMP implemented by the city and county is a multi-faceted, dynamic program which is designed to reduce stormwater pollution to the maximum extent practicable. The CSWMP emphasizes all aspects of pollution control including but not limited to public awareness and participation, source control, regulatory restrictions, water quality monitoring, and treatment control.

The Sacramento Stormwater Management Program has developed the January 2000 Guidance Manual for On-Site Storm Water Quality Control Measures. The Guidance Manual contains the 2000/2001 Progress Report that provides general conditional language used to require development projects to incorporate erosion and sediment controls and onsite stormwater quality control measures. For most public and quasi-public projects, mitigation requiring the project to comply with the County's Land Grading and Erosion Control Ordinance is required. However, the project is exempt from such County requirements. However, the proposed project would comply with all stormwater permit requirements.

California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency. Responsibilities of the California Energy Commission include, but are not limited to, forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts or larger, promoting energy efficiency, supporting renewable energy by providing market support, and planning for and directing state response to energy emergencies. SB 1389 requires the California Energy Commission to conduct

"assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices." The California Energy Commission reports the results of these assessments and forecasts every two years to the governor, the legislature, and the California public in the Integrated Energy Policy Report.

Senate Bill 610

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 Public Resources Code and Section 10910 et seq. of the Water Code) requires the preparation of "water supply assessments" for large developments (i.e., more than 500 dwelling units or nonresidential equivalent; shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space; commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space; or industrial, manufacturing, processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area).

These assessments, prepared by "public water systems" responsible for serving project areas, address whether existing and projected water supplies are adequate to serve the project, while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. If the UWMP did not account for the project's water demand, or if the public water system has no UWMP, the project's water supply assessment (WSA) must discuss whether the system's total projected water supplies (available during normal, single-dry, and multiple-dry water years during a 20-year projection) would meet the project's water demand in addition to the system's existing and planned future uses, including agricultural and manufacturing uses.

22 California Code of Regulations Division 4.5

Title 22 of the California Code of Regulations discusses an array of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transportation, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transportation, disposal, and recycling of universal wastes, where universal wastes are defined as those wastes identified in Section 66273.9 of Title 22 of the California Code of Regulations, including batteries, electronic devices, mercury containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements include recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Division 4.5 of Title 22 also provides restrictions and standards relevant to waste destination facilities and provides authorization requirements for various waste handlers. Title 22 includes California's Universal Waste Rule, as well as other additional waste handling and disposal requirements.

Local

Sacramento County 2030 General Plan

The Public Facilities Element of the Sacramento County General Plan includes goals and policies related to utilities and service systems, including solid waste services and facilities and energy facilities. The following policies from this element are relevant to the project:

Solid Waste Service and Facilities

Policy PF-20. Support the implementation of recycling programs for the area of Sacramento County through the Source Reduction and Recycling Element of the County Integrated Waste Management Plan in order to meet the requirements of AB 939.

Policy PF-25. Transportation of solid waste shall utilize the safest practical means and routes of transport.

Policy PF-26. Solid waste collection vehicles shall minimize dispersion of litter, odor and fumes.

Energy Facilities

Policy PF-65. The County will seek input from SMUD at the earliest possible stage in the development process.

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 so as 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 archaeological 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.

3.19.2 Environmental Setting

The project site is within the Sacramento Valley – South American Subbasin (South American Subbasin), Basin Code 5-021.65, which is one of sixteen subbasins that comprise the Sacramento Valley Groundwater Basin.

There are nine municipal and two agricultural water purveyors within the subbasin. The Sacramento Regional County Sanitation District is the only recycled water purveyor in the subbasin (Larry Walker and Associates 2021). Agricultural irrigation water at the project site is sourced from onsite and local groundwater wells.

The following sections are based on the setting and results of the *Water Supply Assessment* report prepared for the project (AECOM 2025) and included in Appendix HY-1.

Water Supply

Although they do not serve the project site, the project site is within the Sacramento County Water Agency (SCWA) Zone 40 Central Service Area and SCWA's Laguna-Vineyard service boundaries for municipal supplies, but outside of the service boundaries for agricultural water purveyors. As mentioned above, agricultural irrigation water at the project site is sourced from onsite and local groundwater wells.

SCWA's Zone 40 has potable surface water supplies, a non-potable surface water supply, and groundwater available to meet its customers' demands. SCWA surface water supplies for Zone 40 are diverted from the Sacramento River at Freeport and obtained via the City of Sacramento's Sacramento River water treatment plant (WTP) and Fairbairn WTP. Groundwater is supplied to Zone 40 from wells that that are connected to groundwater treatment plants (GWTPs) and from wells that pump directly into the distribution system (direct feed). Based on the estimated water use of existing and new customers, SCWA anticipates an approximate doubling of potable and non-potable water use in Zone 40 between 2020 and 2045. However, these demands are expected to be met within its service areas in normal, single dry, and five consecutive dry years during this same period (Tully & Young 2021).

There are no streams within the northern or southern areas of the project site where the PV solar panels, BESS, substation, and associated infrastructure would be installed. However, the northern area of the project site is located just north of Frye Creek and the southern area of the project site supports three agricultural ditches, an irrigation pond, and pipelines and other irrigation infrastructure.

The South American Subbasin has one principal aquifer which is subdivided into an upper, unconfined aquifer and a lower, semi-confined aquifer. Geologic formations include lenses of interbedded sand, silt, and clay, interlaced with coarse-grained stream channel deposits. The upper portion of the aquifer is often used for private domestic and/or irrigation wells. The lower portion of the aquifer is often targeted by larger municipal

supply wells to avoid impacting the domestic wells screened in the upper portion of the aquifer (Larry Walker and Associates 2021).

Recharge to the aquifer occurs from streams and rivers and from a combination of rainfall and applied water. The majority of recharge occurs in areas where soils are coarse and where there is agricultural applied water. Groundwater is generally of good quality and meets local needs for municipal, domestic, and agricultural uses.

Section 3.10, "Hydrology and Water Quality." provides further discussion of groundwater recharge, levels, subsidence, and sustainability, in the South American Subbasin.

Existing Groundwater Demand

As mentioned above, the project lies within the South American Subbasin. Groundwater levels in the western portion of the South American Subbasin have been generally increasing since the 1980s despite a turn towards drier conditions and increasing population, however, eastern portions of the South American Subbasin show decreases in groundwater levels possibly due to a combination of remediation activities at nearby sites (Appendix HY-1). The project site is currently served by two onsite wells in the southern area of the project site (Well 2730064 and Well 2628266) and one local well for the northern area of the project site (Well 2627257). Future demands from the project are expected to be met by these same wells. Groundwater would be used to support ongoing agricultural activities such as grazing (irrigated pasture), possible crop production, and/or establishment of pollinator habitat. Approximately 385 acres of cropland (e.g., corn or sudan) and 103 acres of pasture are located within the northern and southern areas of the project site. For the proposed project, it was conservatively assumed that the water demand for existing agricultural activities, estimated to be 775 acre-feet per year (AFY), would continue to be used in a variety of future agricultural activities at the project site.[1]

The *South American Subbasin Groundwater Sustainability Plan* (plan) [Larry Walker and Associates 2021] is the guidance document prepared by the Groundwater Sustainability Agencies that explains how the subbasin will be managed sustainably over a 20-year timeframe. The plan concludes that long-term groundwater basin sustainability will be achieved under a variety of project and management action scenarios modeled (when climate change is not considered), and with implementation of all the planned projects and accounting for an expected minor planned reduction in demand, long-term groundwater basin sustainability is projected to be achieved with climate change conditions (Larry Walker and Associates 2021). Although the proposed project is not directly accounted for in the groundwater sustainability modeling, regional changes in land use and water demands are part of the future condition projections.

[1] Existing agricultural use from the two onsite wells and the one local well that would be used for development of the southern and northern areas of the project site, respectively. This value represents average annual use from 2021 to 2023. Data was provided by SMUD (2024).

Section 3.10, “Hydrology and Water Quality.” provides further discussion of groundwater recharge, levels, subsidence, and sustainability, in the South American Subbasin.

Wastewater

The proposed project would not include the construction of permanent restrooms. The proposed project would not require or result in the relocation or construction of new or expanded wastewater collection, conveyance, or treatment facilities.

Solid Waste Management

Solid waste collection in the project area is provided by the Sacramento County Department of Waste Management & Recycling (DWMR). DWMR transports collected waste to the Kiefer Landfill. The Kiefer Landfill is owned and operated by Sacramento County, which is located on a 660 acre site at Kiefer Boulevard and Grant Line Road (Sacramento County 2019). The 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, green materials, agricultural debris, and other nonhazardous designated debris. According to the California Department of Resources Recycling and Recovery (CalRecycle), the Kiefer Landfill has a maximum permitted throughput of 10,815 tons per day, a total maximum permitted capacity of 117.4 million cubic yards, a remaining capacity of approximately 102.3 million cubic yards, and an anticipated closure date of January 1, 2080 (CalRecycle 2023).

Gas and Electric Facilities

SMUD provides electricity throughout Sacramento County. There is existing SMUD electrical infrastructure in the project site and vicinity. As stated in Chapter 2, “Project Description,” the project would interconnect to SMUD’s distribution system through new and reconductored distribution facilities. The project would include up to 3.5 miles of new offsite 69 kilovolt (kV) lines and up to 4 miles of reconductored existing overhead 69kV lines.

Pacific Gas and Electric Company (PG&E) provides natural gas service to Sacramento County. There are no natural gas transmission mains in the project site (PG&E 2024).

Telecommunications Facilities

Telecommunication services in Sacramento County are provided by various companies via a combination of underground facilities and above ground cellular towers. According to the Preliminary Geotechnical Investigation Report, the project site contains two radio towers with ancillary guy wires, structures, and fencing approximately 1,000 feet west of the proposed substation location (Kleinfelder 2024).

3.19.3 Environmental Impacts and Mitigation Measures

Methods and Assumptions

The analysis of project impacts on utilities and service systems was based on a review of existing information about the utilities present within and near the site, and the service systems that serve the area occupied by the proposed project and the *Water Supply Assessment* prepared for the proposed project by AECOM (2025; Appendix HY-1). The information obtained from these sources was reviewed and summarized to establish existing conditions and identify potential environmental effects, based on the standards of significance presented in this section.

In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local ordinances and regulations (see Section 3.19.1, "Regulatory Setting").

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact related to utilities and service systems if it would:

- require or result in the relocation or construction of new or expanded water, wastewater treatment facilities, or storm water drainage, electrical power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects;
- not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals; or
- not comply with federal, State, or local management and reduction statutes and regulations related to solid waste.

Impacts related to stormwater drainage facilities are addressed in EIR Section 3.10, "Hydrology and Water Quality."

Impact Analysis

Impact 3.19-1. Require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Water

As discussed above, the project site is not served by a municipal water service provider. The project would use existing wells (two onsite wells and one local well) for construction and operations of the project. The project would not require new or relocated municipal water supply infrastructure or new or expanded water treatment facilities. Therefore, the project would not require or result in the relocation or construction of new or expanded water facilities, and **no impact** would occur.

Wastewater

The proposed project would not include the construction of permanent restrooms. The proposed project would not require or result in the relocation or construction of new or expanded wastewater collection, conveyance, or treatment facilities. Therefore, the project would not require or result in the relocation or construction of new or expanded wastewater treatment or treatment plants, and **no impact** would occur.

Electric Power

The project itself involves the construction and maintenance of a photovoltaic (PV) energy generating facility, including a Battery Energy Storage System (BESS), substation, and distribution lines. The project would include up to 3.5 miles of new offsite 69 kilovolt (kV) lines and up to 4 miles of reconductored existing overhead 69kV lines. A detailed description of these proposed electrical facilities is provided in Chapter 2, “Project Description” under the “Energy-Related Infrastructure” Section.

Electric facilities and connections proposed as part of the project could result in potential environmental impacts. These impacts are discussed extensively throughout this EIR and, where appropriate, mitigation measures are discussed in the respective resource sections where they apply. Based on the findings throughout this EIR, the overall impact related to electric power would be **less than significant with mitigation incorporated.**

Natural Gas

Solar PV facilities do not require the use of natural gas for the power generation process. Therefore, no natural gas facilities are proposed as part of this project, nor would the project result in the relocation or construction of new or expanded natural gas facilities that would cause an adverse environmental effect. Therefore, there would be **no impact** related to natural gas facilities.

Telecommunications Facilities

As stated in Chapter 2, "Project Description", telecommunications would be provided from a local provider or a microwave/satellite communications tower. Underground and/or overhead fiber optic cables would be installed onsite and along the interconnection and collection lines between the solar arrays, BESS yard, and the generation substation.

SMUD would coordinate with telecommunication providers during the design and pre-construction planning to ensure minimal disruption to service. Therefore, this impact would be **less than significant**.

Impact 3.19-2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As mentioned above, the project site is currently served by two onsite wells and one local well and the future demands from the project are expected to be met by these existing wells. A Water Supply Assessment (AECOM 2025) was prepared for the proposed project to determine whether the projected available water supplies would meet the proposed project's water demand (Appendix HY-1). In estimating the effects of groundwater supplies for the proposed solar facilities, AECOM evaluated the potential reduction of groundwater storage from the solar facility's[2] construction, operational, and maintenance phases as compared to the existing groundwater storage underlying the project site.[3]

The proposed project would continue to use the land for agricultural activities through continued irrigation of the pastures within the project site for grazing, possible crop production, and potentially for pollinator friendly vegetation. However, the project would not be associated with increased urban water demands. The proposed project would also use groundwater from the existing wells for periodic washing of the solar panels during operations. This increase in water use, along with all other projected increases is expected to be less than projected future demands with the subbasin (i.e., projected changes based on the population growth trends reported in urban water management plans, general plans, and other planning documents, or current information provided by

[2] The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. Senate Bill 610 (Chapter 643, Statutes of 2001; Section 21151.9 of the California Public Resources Code and Section 10910 et seq. of the California Water Code) requires the preparation of "water supply assessments" (WSAs) for large developments. The proposed project satisfies the statutory definition of a "project" for the purpose of determining Senate Bill 610 applicability because it is considered an industrial facility in excess of 40 acres in size, per 10912(a)(5) of the California Water Code.

[3] Section 10910(c)(4) of the California Water Code states the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

purveyors). Therefore, a slight increase in groundwater use associated with the proposed project is not expected to exceed demands already predicted for future conditions.

In addition to agricultural use and washing of panels during operation, the two onsite wells and one local well are also expected to be used as a source of construction water for the project. Estimated demands for the project are summarized in Table 3.19-1.

Table 3.19-1. Water Demand from Onsite and Local Wells

Project Phase	Water Demand	Primary Use
Construction	15 AF over 18 to 24 months	Soil compaction and dust control
O&M of Solar Facilities	1 AFY over 35 years	Washing of solar panels
Continued Agricultral Use	775 AFY	Future agricultural activities

AF = acre-feet; AFY = acre-feet per year; O&M = operation and maintenance

Local drawdown effects from pumped groundwater during project construction, operations, and maintenance is expected to be negligible. As seen in Table 3.19-1, construction of the proposed project would require up to 15 AF of groundwater over an 18- to 24-month period which could occur during normal, single dry, and even multiple dry water years. Approximately 1 AFY would also be needed during a longer 35-year operational time period. Additionally, approximately 775 AFY of groundwater would be used to support agricultural activities such as growing foraging in the irrigated pasture, grazing, possible crop production, and/or establishment of pollinator habitat. However, groundwater pumping for these agricultural activities is assumed to be unchanged. These supplies are currently available within the groundwater basin and can be accounted for under projected conditions with the planned projects and potential management actions under consideration. Modeling indicates that there are currently adequate supplies to support the project even in the context of normal, single dry, and multiple dry water years (Appendix HY-1).

Projections of future conditions with or without climate change indicate that the groundwater subbasin is in slight imbalance (Appendix HY-1). Per the Sacramento Valley – South American Subbasin groundwater sustainability plan, planned projects and management actions will be implemented to avoid undesirable results over the 20-year to 50-years planning horizon of the groundwater sustainability plan. As such, the Water Supply Assessment concluded that there would be sufficient supplies to serve the increased project demand during the 18- to 24-month construction period and during operations over the next 35 years and implementation of the proposed project would not conflict with the sustainable groundwater management plan of the subbasin(Appendix HY-1). As the project and foreseeable development within the subbasin would have sufficient water supplies available, and impacts related to water supply would be **less than significant**.

Impact 3.19-3. 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?

Low amounts of liquid waste would be generated during construction, operation, and maintenance. During construction and operations, portable sanitary facilities would be utilized. The proposed project would not include construction of permanent restrooms for employees during the project's operational phase. Therefore, the proposed project would not result in a determination that a wastewater treatment provider has inadequate capacity to serve the project's demand in addition to the provider's existing commitments. There would be **no impact.**

Impact 3.19-4. 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 activities would generate waste that would require offsite disposal. Solid waste generated would consist of scrap metal (copper wire, iron, steel, and aluminum); solid waste (trash, cardboard, wood products, inert organics, and concrete); and minimal hazardous waste (fuel, lubricants, and oils used by construction equipment). The project activities would not include large-scale demolition of existing facilities, so the amount of solid waste that would be generated is expected to be adequately served by existing facilities. In accordance with the CALGreen requirements described above in Section 3.19.1, "Regulatory Setting", a minimum of 65 percent of construction and demolition debris would be recycled or reused, which would reduce the burden on solid waste collection facilities and align with statewide, regional, and local solid waste reduction goals. All remaining solid waste generated during construction of the project would be collected would be disposed of or recycled by the contractor at the nearby Kiefer Landfill.

Operation of the project would generate solid waste through the repair and replacement of inverters and PV panels, which are expected to need replacement every 10 and 30 years, respectively. Waste generated through project operation would be collected and disposed of or recycled in accordance with state and federal laws. As described above in section 3.19.2, "Environmental Setting", the Kiefer Landfill has a projected closure date of January 1, 2080, and has a remaining capacity of approximately 102.3 million cubic yards, as of 2023. Kiefer Landfill would have adequate capacity to accept the project's solid waste and would account for a very small percentage of the landfill's remaining capacity. Landfill waste generated by the project would not exceed its permitted daily tonnage of 10,815 tons per day or deplete substantial long-term capacity.

All waste shipped offsite would be transported in accordance with the Department of Transportation, Code of Federal Regulations Title 49, Subtitle B, Chapter I and CCR, Title 13, Division 2. While the project would slightly increase the total amount of solid waste generation in the area during construction and operations, the project would not 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. Therefore, the impact would be **less than significant**.

Impact 3.19-5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

As stated above, the project would comply with all applicable state, regional, and local requirements related to the handling and disposal of solid waste. This would include recycling or reusing a minimum of 65 percent of construction and demolition debris during construction, and properly disposing of the remaining material at the nearby Kiefer Landfill. Additionally, the project is anticipated to result in a small amount of hazardous waste during construction, such as diesel fuel, oil, solvents, etc. and construction contractors would be responsible for disposing of these wastes at permitted facilities. All waste shipped offsite would be transported in accordance with the Department of Transportation, Code of Federal Regulations Title 49, Subtitle B, Chapter I and CCR, Title 13, Division 2. Operation of the proposed project would generate a negligible amount of solid waste that would not conflict with any statues or regulations related to solid waste. Therefore, the impact would be **less than significant**.

3.20 Wildfire

This section summarizes regulations applicable to wildfire, describes the environmental setting for wildfire in the project vicinity, and assesses potential changes to those conditions that would result from implementing the proposed project. Effects of the proposed project on wildfire are generally defined in terms of the proposed project's physical characteristics, location, impacts on an emergency response plan or emergency evacuation plan, and exacerbation of wildfire risks associated with pollutant concentrations or uncontrolled spread of wildfire. Also considered is the project-related installation or maintenance of associated infrastructure, including activities that could present a fire risk and exposure of people or structures to significant secondary wildfire risks. However, overall, maintenance activities are often aimed at reducing fire risk. 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.

3.20.1 Regulatory Setting

Federal

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 provides the legal basis for the Federal Emergency Management Agency's (FEMA) mitigation planning requirements for state, local, and tribal governments as a precursor to mitigation grant assistance. The Disaster Mitigation Act of 2000 requires that local governments prepare a Local Hazard Mitigation Plan (LHMP) that must be reviewed by the State Mitigation Officer, approved by FEMA, and renewed every 5 years. The LHMP must include a planning process, a risk assessment, a mitigation strategy, and plan maintenance and updating procedures to identify the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government. Natural hazards include, but are not limited to, earthquakes, tsunamis, tornadoes, hurricanes, flooding, and wildfires.

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. Still, they are not laws 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 2023 NEC edition specifically address installation and operation of photovoltaic (PV) systems and associated facilities (NFPA 2023).

NFPA 850, Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations

NFPA 850, Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, was prepared for the guidance of those charged with the design, construction, operation, and protection of electric generating plants and high voltage direct current converter stations. This document provides fire hazard control recommendations for the safety of construction and operating personnel, the physical integrity of plant components, fire protection systems and equipment, and the continuity of plant operations.

NFPA 855, Standard for the Installation of Stationary Energy Storage Systems

NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, provides minimum requirements for mitigating hazards associated with energy storage systems. This document provides recommendations for exhaust ventilation; smoke and fire detection; explosion control; fire protection systems and equipment; and installing, operating, maintaining, and decommissioning energy storage systems.

State

California Fire Code

The California Fire Code (Title 24, Chapter 9 of the CCR) contains regulations relating to the 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 2022 California Fire Code with July 2024 Supplement contain specialized technical regulations related to energy systems.

Section 1204

Section 1204 (Portable Generators) of the California Fire Code requires that portable generators are operated only outdoors a minimum of 5 feet from any building openings

such as windows and door or air intakes. Portable generators shall not be operated within buildings or enclosed areas.

Section 1205

Section 1205 (Solar Photovoltaic Power Systems) of the California Fire Code requires a clear, brush-free area of 10 feet around the perimeter of the ground-mounted PV arrays and allows for a maintained vegetative surface, approved by the fire code official, to be installed and maintained under PV arrays and associated electrical equipment.

Section 1206

Section 1206 (Stationary Fuel Cell Power Systems) of the California Fire Code identifies requirements for the installation and operation of stationary fuel cell power systems, including ventilation and exhaust, gas detection systems, fuel supply, and fire protection systems.

Section 1207

Section 1207 (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

Public Resources Code 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.

Public Resources Code Section 4292

PRC Section 4292 sets forth the basic requirements for clearances around poles and towers that are part of any electrical transmission or distribution line upon any mountainous, forest, brush or grass-covered land. 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).

Public Resources Code 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.

Public Resources Code 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.

Public Resources Code 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.

Public Resources Code 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.

Public Resources Code 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.[1]

Senate Bill 38: Emergency Response and Emergency Action Plans for Battery Energy Storage Facilities

SB (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 (BESS) 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.

[1] 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.

Senate Bill 901

In September 2018, SB 901 was adopted and requires publicly owned utilities to prepare wildfire mitigation measures if the utilities' overhead electrical lines and equipment are located in an area that has a significant risk of wildfire resulting from those electrical lines and equipment. Before January 1, 2020, and annually thereafter, these utility companies must prepare a Wildfire Mitigation Plan (WMP), except where its governing board determined that its federally approved fire prevention plan met the otherwise applicable requirements. The WMP must include a description of preventive strategies and programs, plans for vegetation management, plans for inspections, and a description of metrics to evaluate plan performance, among many other measures.

California Building Standards Code

The State of California's minimum standards for structural design and construction are provided in the California Building Standards Code (CBSC) (24 California Code of Regulations). The standards set forth in the CBSC are based on the International Building Code, which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous more detailed or more stringent regulations. The CBSC provides standards for various aspects of construction, including (but not limited to) excavation, grading, and earthwork construction. In accordance with California law, certain aspects of the proposed project would be required to comply with all provisions of the CBSC. The CBSC requires certain building requirements to adhere to the Fire Code (Part 9). Local agencies must ensure that development in their jurisdictions comply with guidelines contained in the CBSC. Cities and counties can, however, adopt building standards beyond those provided in the code.

State Responsibility Areas (Public Resources Code 4102)

State Responsibility Areas (SRA) are defined by PRC Section 4102 as areas of the state in which the California Department of Forestry and Fire Protection (CAL FIRE) has determined that the financial responsibility for preventing and suppressing fires lies with the State of California. SRAs are lands in California where CAL FIRE has legal and financial responsibility for wildfire protection. SRA lands typically are unincorporated areas of a county, are not federally owned, have wildland vegetation cover, have housing densities lower than three units per acre, and have watershed or range/forage value.

LRA include lands that do not meet criteria for SRAs or federal responsibility areas, or are lands in cities, cultivated agricultural lands, and nonflammable areas in the unincorporated parts of a county. LRAs can include flammable vegetation and wildland-urban interface areas. LRA fire protection is provided by the local fire departments, fire protection districts, county fire departments, or by contract with CAL FIRE.

Very High Fire Hazard Severity Zones (Government Code 51177)

Very High Fire Hazard Severity Zones (Very High FHSZ) are defined by Government Code Section 51177 as areas designated by CAL FIRE as having the highest possibility of having wildfires. These zones are based on consistent statewide criteria and the severity of fire hazard that is expected to prevail in those areas. The Very High FHSZs are also based on fuel loading, slope, fire weather, and other factors, such as wind, that CAL FIRE has identified as a major cause of the spreading of wildfires. FHSZ maps are produced and maintained for each county. CAL FIRE's Strategic Fire Plan provides an overall vision for a built and natural environment that is more fire resilient through the coordination and partnerships of local, state, federal, tribal, and private entities (CAL FIRE 2018). First developed in the 1930s, the Strategic Fire Plan is periodically updated; the current plan was prepared in 2018. The Plan analyzes and addresses the effects of climate change, overly dense forests, prolonged drought, tree mortality, and increased severity of wildland fires through goals and strategies. The primary goals of the 2018 Strategic Fire Plan are to do the following.

- Improve the availability and use of consistent, shared information on hazard and risk assessment.
- Promote the role of local planning processes, including general plans, new development, and existing developments, and recognize individual landowner/homeowner responsibilities.
- Foster a shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans.
- Increase awareness and actions to improve fire resistance of human-made assets at risk and fire resilience of wildland environments through natural resource management.
- Integrate implementation of fire and vegetative fuels management practices consistent with the priorities of landowners or managers.
- Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression, and related services.
- Implement needed assessments and actions for post-fire protection and recovery.

California Public Utilities Commission Decision 17-12-024

To improve fire safety associated with electrical utility facilities, the California Public Utilities Commission's (CPUC) Safety and Enforcement Division adopted Decision 17-12-024, Decision Adopting Regulations to Enhance Fire Safety in the High Fire-Threat District. The decision mandated the CPUC to prepare a statewide Fire-Threat Map to identify areas of the highest risk, where stricter fire safety regulations should be

incorporated. The Fire-Threat Map divides such areas into Tier 1 (High), Tier 2 (Elevated), and Tier 3 (Extreme) Hazard Zones.

Local

SMUD 2023-2025 Wildfire Mitigation Plan

In 2019, SMUD published its initial WMP in accordance with SB 901 Section 8387, which requires every publicly owned utility to prepare and present a WMP to a governing body by January 2020, and provide comprehensive revisions to the WMP every 3 years thereafter. In 2023, SMUD published its 2023-2025 WMP, which served as the comprehensive triennial update to its WMP (SMUD 2023). SMUD updated its 2023-2025 WMP in 2024 (SMUD 2024) and utilizes it to construct, maintain, and operate their electrical lines and equipment to minimize potential wildfire risk.

The WMP describes SMUD's wildfire prevention strategies and programs, including vegetation management programs and inspection and maintenance programs, to mitigate the threat of power-line ignited wildfires. In addition, the WMP provides protocols for deactivating infrastructure in severe weather or hazard conditions, a strategy for how service will be restored in the event of a wildfire, and actions SMUD is taking to mitigate the threat of infrastructure-ignited wildfires, including a variety of plans, programs, and procedures. The WMP meets or exceeds the requirements of Public Utility Commission (PUC) section 8387 for publicly owned electric utilities.

Sacramento County Operational Area Evacuation Annex

The Sacramento County *Operational Area Evacuation Annex* (Sacramento County Office of Emergency Services 2018) provides evacuation strategies that will be implemented in an affected area, including public alerts and warnings, transportation, and evacuation triggers. The Annex outlines local government (Cities and Special Districts), the Sacramento Operational Area, and State responsibilities for management of evacuation during an emergency situation. Organizations, operational concepts, responsibilities, and a documented process to accomplish an evacuation are defined within the Annex.

Sacramento County General Plan

The *Sacramento County General Plan* of 2005-2020 (Sacramento County 2017) Safety Element includes the following policies related to wildfire that apply to the proposed project.

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 Multi-Jurisdictional Local Hazard Mitigation Plan

The Sacramento County 2021 Local Hazard Mitigation Plan Update is a multi-jurisdictional plan that covers the entire geographic area within Sacramento County's jurisdictional boundaries and includes jurisdictional annexes that detail the hazard mitigation planning elements for each additional participating jurisdiction (Sacramento County 2023). In accordance with the Disaster Mitigation Act of 2000, the 2021 LHMP Update identifies potential hazards and mitigation strategies for reducing the County's risk and vulnerability from identified hazards, including wildfires.

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.

3.20.2 Environmental Setting

Wildland Fires

The term wildfire refers to an unplanned, unwanted, wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to extinguish the fire (California Government Code 51177). Wildfire's characteristics depend on the circumstances where the fire is burning. Brush fires, which burn both natural vegetation and dry-farmed grain, typically burn fast and very hot, and often threaten homes in the area and lead to serious destruction of vegetation.

Short-term effects of wildfires include the destruction of timber and loss of wildlife habitat, scenic vistas, and watersheds, as well as immediate impacts on human health (e.g., wheezing, coughing, sore eyes and throat, shortness of breath) and loss of human life or injury. Long-term effects of wildfires include smaller timber harvests, reduced access to recreational areas, and destruction of community infrastructure and cultural or economic resources. Wildfires also increase the area's vulnerability to secondary impacts such as flooding, landslides, and increased runoff. Wildfire damage to life and property is

generally greatest in areas designated as wildland-urban interface, where development is in close proximity to densely vegetated areas.

In addition, climate change is expected to contribute to significant changes in fire regimes. Fire is a natural component of many ecosystems and natural community types, including grasslands, chaparral/scrub, and oak woodland. For each of these natural communities, fire frequency and intensity influence community regeneration, composition, and extent.

The project site is generally flat, and there are no areas of steep slopes within the project site or immediately surrounding areas. The dominant landcover within the project site includes irrigated pastures and croplands, and the surrounding land uses include low-density residential, cattle grazing, croplands, and existing open space reserves. Vernal pool complexes and wetlands are common in the surrounding existing preserves. The project site's current (and historic) use is in agricultural production, which has low fire risk due to irrigation. An existing irrigation system along the farm roads within the project site is used to flood-irrigate pasture and crops. There are no traditional fire fuels within the project site.

The CAL FIRE Fire and Resource Assessment Program (FRAP) compiles fire perimeters and has established an ongoing fire perimeter data capture process. Historical FRAP data shows no fire incidents within the project site or adjacent to the project site (CAL FIRE 2023b). The 2020 Grant Fire is the closest and most recent fire incident recorded, which occurred approximately 6 miles northeast of the project site and burned over 5,000 acres just north of the Sloughhouse community (CAL FIRE 2023b). Past fire incidents that have burned over 500 acres include the 2020 Meiss Fire and the 1981 Meiss Fire, both of which occurred within 10 miles southeast of the project site (CAL FIRE 2023b). In summer of 2024 the Florin Fire burned near the project site. This fire has not been added to the historic FRAP data yet.

Fire Hazard Severity Zone

As explained above, CAL FIRE identifies SRAs and LRAs, which are areas in which the state or local fire agencies, respectively, are responsible for wildfire management. However, because wildfires can rapidly spread across responsibility areas, local and state firefighting groups often work collaboratively to control wildland fires and fires within the urban-wildland interface. Land areas identified as SRAs and LRAs are divided into Fire Hazard Severity Zones (FHSZs), which include areas of moderate, high, and very high fire hazard risk.

According to CAL FIRE's Fire Hazard Severity Zones viewer, project site is not within an SRA (CAL FIRE 2023a). The nearest lands within an SRA are northeast of the project site along Grant Line Road and east of the Sloughhouse community. Most of these lands are designated by CAL FIRE as Moderate Fire Hazard Zones, with a relatively small amount of lands near Rancho Murieta classified as High Fire Hazard Severity Zones (CAL FIRE 2023a). These lands are served by Battalion 4 of CAL FIRE's Amador-El Dorado Unit (CAL FIRE 2023a). Additionally, there are no lands within or near the project site that

are classified as Very High Fire Hazard Severity Zones within an SRA; the closest lands classified as such are located over 20 miles southeast of the project site, just south of the Clay community (CAL FIRE 2023a).

The project site is within an LRA (CAL FIRE 2008), and the Sacramento Metropolitan Fire District (Metro Fire) Battalion 9 provides fire protection services to the project site (Metro Fire 2023). The closest station to the project site is Station 55 located at 7776 Excelsior Road Sacramento, CA 95829, less than 5 miles southwest of the project site (Metro Fire 2023). There are no Very High Fire Hazard Zones within or near the project site; the closest VHFSZ within an LRA is approximately 13 miles northeast of the City of Galt (CAL FIRE 2008).

Environmental Impacts and Mitigation Measures

Methods and Assumptions

This analysis of the proposed project's effects related on wildfire is based on a review of CAL FIRE's Fire Hazard Severity Zone map for Sacramento County; regulatory safety procedures, standards, and regulations; and the information resources cited herein. Effects were identified and evaluated qualitatively based on the environmental characteristics of the project site and the magnitude and duration of activities related to the implementation of the proposed project.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, the proposed project would result in a potentially significant impact related to wildfire if, in areas within or near SRAs or lands classified as Very High FHSZs, it would do the following:

- 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.
- 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

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 – Infrastructure that could exacerbate wildfire risks in this case refers to installation of utility infrastructure (i.e., interconnection lines and distribution system upgrades) and construction of the internal roadways. The potential for installation or maintenance of this infrastructure to result in temporary or ongoing impacts to the environment are addressed in the applicable resource sections throughout this EIR. Where development of the proposed project would result in potentially significant or significant environmental impacts, mitigation measures are identified to reduce those impacts to less-than-significant levels. There are no additional potentially significant or significant impacts associated with the installation and maintenance of infrastructure beyond those comprehensively considered throughout the other sections of this EIR, including Section 3.7, "Geology, Soils, and Paleontological Resources," Section 3.9, "Hazards and Hazardous Materials," and Section 3.10, Hydrology and Water Quality." Therefore, the installation and maintenance of additional infrastructure that could potentially exacerbate wildfire is not evaluated further in this section. Please see Impact 3.20-2 for further analysis of the potential for construction, operation, and maintenance of solar PV panels, inverters, transformers, and electrical components of the distribution lines, substation, and the BESS to exacerbate fire risks.

Downstream Runoff, Post-Fire Slope Instability, or Drainage Changes — The project site is generally flat, and there are no off-site areas of steep slopes in the immediate project vicinity that could affect the project site or could be affected by it. Post-construction, vegetation would grow under and between the modules to prevent erosion and provide forage for sheep to graze. In addition, prior to construction, the project would be required to prepare a Stormwater Pollution Prevention Plan, and implement site-specific Best Management Practices that manage stormwater runoff and erosion during construction (see Section 3.10, "Hydrology and Water Quality," for a detailed discussion of stormwater runoff and drainage changes). Therefore, the proposed project would not create conditions that cause downstream runoff, post-fire slope instability, or drainage changes that would expose people or structures to significant risks, and this issue is not evaluated further in this section of the EIR. There is **no impact**.

Impact Analysis

Impact 3.20-1. Substantially impair an adopted emergency response plan or emergency evacuation plan?

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 would not be within an SRA or on lands classified as a very high fire hazard severity zone.

All construction material staging areas would be within the 400-acre project site or the areas immediately surrounding the project site within the 534-acre area studied in this EIR. Primary access to the project site during construction and operation would be provided from Eagles Nest and Florin roads, as shown in Exhibit 2-3 in Chapter 2.0, Project Description, and would provide appropriate emergency ingress and egress. In addition to the existing earthen farm roads within the project site, earthen or graveled roads, approximately 12 to 20 feet wide, would be constructed throughout the site and between the solar arrays where existing farm roads cannot be utilized to accommodate construction and ongoing maintenance of project facilities and to allow emergency vehicle access. In the event of an emergency, Highway 99 via Grant Line Road and Highway 50 via State Route 16 (located less than 1 mile north of the project site) would help meet evacuation needs from low-density residential areas and communities surrounding the project site (Sacramento County 2017). For these reasons, project construction and operation would not impede emergency vehicles or adopted emergency evacuation plans, and this impact would be **less-than-significant**.

Impact 3.20-2. 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?

Appendix G of the CEQA Guidelines determines wildfire impacts based on whether a proposed project would occur within or near an SRA or on lands classified as very high fire hazard severity zones. The proposed project would not be within or near an SRA or on lands classified as a very high fire hazard severity zone. However, because the concern regarding wildfires has increased, the following analysis presents the potential for the proposed project to exacerbate wildfire risks.

Project Construction

During project construction, the primary fire hazards would be from vehicles and construction equipment. Typical equipment includes scrapers, dozers, dump trucks, watering trucks, motor graders, vibratory compactors, sheepsfoot, trenching and cable installation equipment, generators, all terrain vehicles (ATVs), pickup trucks, loaders, excavators, and other earthwork-related equipment (see Chapter 2.0, “Project Description,” for more details). Construction equipment would be parked in staging areas when not in use and would have minimal risk of wildfire ignition as staging areas would be cleared of vegetation prior to construction. Construction vehicles typically use flammable fuels, such as diesel and gasoline, and would potentially be operated near dry vegetation. Hot tailpipes or sparks from chains or other metal objects could ignite dry brush, especially during the warmer, dry months between June and October. 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.

As described in Chapter 2.0, Project Description, existing overhead distribution lines adjacent to and within the project site may be used to provide energy to project infrastructure, temporary construction trailers, and at staging areas during construction of

the project. Some existing distribution lines located onsite may need to be removed, reconfigured, and/or placed underground. 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. Construction of the project would involve preparation, installation, and testing of electrical components such as cables, inverters, wiring, modules, etc. 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 Section 3.9, “Hazards and Hazardous Materials” for further detail).

Construction of the project would be required to comply with all laws, plans, policies, and regulations related to fire safety and wildfire suppression identified above in the Regulatory Setting section, including the applicable requirements from the California Public Resources Code and SB 901. The project would strictly adhere to the applicable requirements and be consistent with standard construction best management practices, ensuring that wildfire risks are minimized during construction.

Operations and Maintenance

The project would operate seven days per week. One regular onsite employee may be required, and some personnel may visit the site periodically to monitor and maintain the system. The project may also require occasional repair or replacement of project components. Inverters may require replacement every 10 years, while PV panels generally last 30 to 40 years. Other operational activities would include BESS equipment maintenance, interconnection equipment maintenance, equipment inspecting and testing, and similar activities. General site maintenance would include vegetation management, road maintenance, removal of debris from fences, and general upkeep of the facility. Operations would also consist of ongoing agricultural activities including flood irrigation to grow forage under and between the modules for sheep grazing.

Pickup trucks, flatbeds, forklifts, and loaders may be used for normal maintenance. Large, heavy-haul transport equipment would be occasionally used to repair or replace equipment. Preventative maintenance kits and certain critical spare equipment would be stored onsite in a small structure or storage container. These intermittent maintenance activities could increase the potential for ignition on-site due to the presence of vehicles and the use of equipment. Other potential causes of wildfire associated with operations and maintenance of the proposed project could include direct current arc faults, hot spot effects, electrical shorts, sparking, motor or other machinery fire, wiring and harnessing fire, overheated junction boxes, vandalism, fire in an inverter, short circuit and fire of components in or on a solar panel, substation and switchgear fire, and thermal runaway associated with battery energy storage facilities.

Most 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. Panels would be washed with water, as needed, to reduce the potential of hot spot effects. 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. The PV system would be operated and maintained consistent with Section 1205 of the California Fire Code and Article 690 of the NEC.

Vegetation would grow under and between the modules to prevent erosion and provide forage for sheep to graze, and the existing irrigation system onsite would be preserved to ensure that it remains functional during project operations. Grazing would minimize wildfire risks as it modifies the amount, height, and continuity of fuel through ingestion and trampling, and has been shown to reduce fuel load more effectively compared to 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). Flood irrigation of the pasture lands would also prevent risk of wildfire.

Assembly and installation of the electrical equipment would meet existing electrical and safety standards of the California Fire Code. In addition to having an underground network of alternating current power cables, electric inverters and transformers would have concrete mat foundations and would be tested prior to use to ensure safe operations and avoid fire risks. Clearances around poles and electrical conductors would be consistent with PRC Section 4292 and PRC Section 4293, respectively.

Ongoing maintenance would ensure all components of the project are in proper condition, thereby minimizing accidents and potential fires. Additionally, the entire project site would be fenced to restrict access to authorized personnel only. This would ensure safety and minimize the potential fire risk from electrical components being damaged or vandalized. SMUD would implement wildfire prevention strategies and programs outlined in its 2023-2025 WMP. These strategies include regular ground inspections of all facilities and vegetation management and implementing work rules and complementary training programs for its workforce to reduce the likelihood of igniting wildfires (SMUD 2023).

During operation, the project would maintain a BESS. A lithium iron phosphate BESS is proposed to be constructed within the project footprint. Two main types of BESSs are being considered for the project: a direct current-coupled and an alternating current-coupled system. Potential hazards associated with battery energy storage facilities are primarily associated with the possibility of thermal runaway 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, and ventilation and air conditioning systems. Fire suppression would include a 10,000-gallon water tank and fire hydrant adjacent to the BESS. The BESS would be installed following all applicable design, safety, and fire standards for the installation of energy storage systems, including, Article 608 of the NEC, NFPA 855, SB 38, and Section 1206 of the California Fire Code, all of which include criteria for fire prevention and

suppression associated with energy storage facilities installations. The BESS would also be operated in compliance with SB 38, which requires an emergency response and emergency action plan that cover the premises of the facility. Implementation and compliance with these design and safety regulations would reduce potential fire risks.

Conclusion

The proposed project would not be within an SRA or on lands classified as a very high fire hazard severity zone and wildfire risks during construction and operation would be offset by compliance with fire safety and wildfire suppression measures identified in the Regulatory Setting discussion above. In addition, SMUD would implement its WMP, which is intended to mitigate the threat of wildfire. Adherence to these safety measures 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. Furthermore, sheep grazing would maintain the amount, height, and continuity of fuel through the project site. For the reasons discussed in this section, impacts related to the potential for the proposed project to exacerbate wildfire risks would be **less than significant**.

4.0 CUMULATIVE IMPACTS

4.1 CEQA Requirements

Section 15130(a) of the State CEQA Guidelines requires a discussion of the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. Cumulatively considerable, as defined in CEQA Guidelines Section 15065(a)(3), means that the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

4.2 Cumulative Impact Approach

CEQA Guidelines Section 15130 identifies two basic methods for establishing the cumulative environment in which a project is considered: the use of a list of past, present, and probable future projects or the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. This cumulative analysis uses a combination of the "list" approach and the "projections" approach to identify the cumulative setting. The effects of past and present projects on the environment are reflected by the existing conditions in the project area.

In the case of the proposed Oveja Ranch Solar Project, the project site and surrounding area have been modified from its natural conditions by human activity. Irrigated pasture and cropland are the dominant landcover types within the project site and the surrounding land uses include low-density residential, cattle grazing, croplands, and existing open space preserves. Vernal pool complexes and wetlands are common in the surrounding existing preserves.

A list of probable future projects is provided below. Probable future projects are those in the project vicinity that have the possibility of interacting with the project to generate a cumulative impact and either:

1. are partially occupied or under construction;

2. have received final discretionary approvals;

3. have applications accepted as complete by local agencies and are currently undergoing environmental review, or

4. have been discussed publicly by an applicant or otherwise have become known to the lead agency, provided sufficient information is available about the project to allow at

least a general analysis of environmental impacts and an evaluation of the likelihood of implementation.

The analysis also considers planning efforts that address regional environmental issues, such as conservation and water quality improvement programs, and potential effects associated with climate change. These plans, programs, and effects are discussed in relevant resource discussions below.

4.3 Cumulative Setting

4.3.1 Geographic Scope

The geographic area that could be affected by implementation of the proposed Oveja Ranch Solar Project varies depending on the type of environmental resource considered. When the effects of the project are considered in combination with those other past, present, and probable future projects to identify cumulative impacts, the other projects that are considered may also vary depending on the type of environmental effects assessed. Table 4-1 presents the general geographic areas associated with the different resources addressed in this analysis.

Table 4-1: Geographic Scope

Resource Topic	Geographic Area
Aesthetics	Local (project site and surrounding public viewpoints)
Agriculture	Local and regional
Air Quality	Regional (pollutant emissions that affect the air basins) and immediate project vicinity (pollutant emissions that are highly localized)
Biological Resources	Local and regional
Cultural Resources	Local (limited to project site), with regional implications
Energy	Local and regional
Geology, Soils, and Paleontological Resources	Local
Greenhouse Gases	Global
Hazards and Hazardous Materials	Local (immediate project vicinity)
Hydrology and Water Quality	Local and regional
Land Use and Planning	Local (immediate project vicinity)
Mineral Resources	Local
Noise	Local (immediate project vicinity where effects are localized)
Population and Housing	Local and regional
Public Services	Local and regional
Recreation	Local and regional
Transportation	Local and regional
Tribal Cultural Resources	Local (limited to project site), with regional implications
Utilities and Service Systems	Local and regional
Wildfire	Local and regional

4.4 Cumulative Impact Analysis

For purposes of this analysis, the proposed Oveja Ranch Solar Project would result in a significant cumulative effect if:

- the cumulative effects of related projects (past, current, and probable future projects) are not significant, and the incremental impact of implementing the proposed Oveja Ranch Solar Project is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact; or
- the cumulative effects of related projects (past, current, and probable future projects) are already significant, and implementation of the proposed Oveja Ranch Solar Project makes a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be substantial or must exceed an established threshold of significance.

Significance criteria, unless otherwise specified, are the same for cumulative impacts and project impacts for each environmental topic area. This cumulative analysis assumes that all mitigation measures identified in Sections 3.1 through 3.20 to mitigate project impacts are adopted. The analysis herein analyzes 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.

Table 4-2: Sacramento County: Past, Present, and Future Projects

Projects	Description
Florin-Vineyard Community Plan	The Florin Vineyard Community Plan was approved by the Sacramento County Board of Supervisors on December 15, 2010. The Plan area covers approximately 3,872 acres and is located within the community planning areas of both Vineyard and South Sacramento. The boundaries are generally Elder Creek Road on the north, Bradshaw Road on the east, the Churchill Downs neighborhood to the south, and the Union Pacific Railroad tracks on the west. The vision for the plan is to provide for a high quality, clean, safe, long-lasting sustainable community that develops in an orderly and systematic manner with adequate public infrastructure and services.
Mather South Community Master Plan	The Mather South Community Master Plan within the Mather Field Special Planning Area is focused on redevelopment of the former Mather Air Force Base. The location is bounded by the Mather Golf Course and Mather Lake to the north, the Folsom South Canal to the east, Kiefer Boulevard to the south and the Mather Preserve and Zinfandel Drive to the west. Proposed uses of the 848 acres of Mather south includes residential dwelling units, a 28-acre Environmental Education Campus and a 22-acre Research and Development Campus, among other uses.
West Jackson Highway Master Plan	The West Jackson Highway Master Plan Draft EIR was published on July 25, 2024. The proposed West Jackson Highway Master Plan Area consists of approximately 5,900 acres located east of South Watt Avenue, north of Elder Creek Road, south of Kiefer Boulevard and west of Excelsior Road in the Vineyard and Cordova communities. The West Jackson Highway Master Plan establishes a framework and strategy for development of the Plan Area, including proposed land use designations, development and operation policies, and plans for infrastructure and public services. The Plan provides for 16,484 residential dwelling units; 988 acres of commercial, employment and industrial land; 2,101 acres of parks and open space; and six elementary schools, one middle school, and one high school (Sacramento County 2025a).
Jackson Township Specific Plan	The Sacramento County Board of Supervisors adopted the final EIR and approved the project on December 13, 2022. The Jackson Township Specific Plan is a proposed master planned community approximately 1,391 acres in size, located south of Mather Field, north of Jackson Road, east of Excelsior Road and generally west of Eagles Nest Road primarily within the Vineyard community, with a small portion north of Kiefer Boulevard within the Cordova community. Proposed uses include up to 6,143 housing units; 2 million square feet of commercial, office and mixed-use development; schools; a fire station and community center; parks; and a large wetland preserve (Sacramento County 2025b).
Vineyard Springs Comprehensive Plan	The Vineyard Springs Comprehensive Plan was initiated to provide for the orderly and systematic development of the planning area consistent with the resolution adopted by the Board supporting a comprehensive approach for the future planning of the Vineyard Urban Growth Area. The Vineyard Springs Plan area is located in the south-central portion of Sacramento County, approximately 13 miles southeast of the central core and north of the city of Elk Grove. The project area consists of 2,650± acres located within the Vineyard Community Planning Area. The Comprehensive Plan area is bounded by Gerber Road to the north, Calvine Road to the south, Excelsior Road on the east, and Bradshaw Road on the west (Sacramento County 2025c).

Projects	Description
North Vineyard Station Specific Plan	The North Vineyard Station Specific Plan was initiated by the Board of Supervisors in November of 1993 and approved on November 4, 1998. The North Vineyard Station Specific Plan area is located in the south-central portion of Sacramento County, approximately 13 miles southeast of the central core and 5 miles north of the city of Elk Grove. The project area consists of 1,594.5± acres located within the Vineyard Community Planning Area. The Specific Plan area is bounded by Florin Road to the north, Gerber Road to the south, the northerly extension of Vineyard Road on the east, and generally by Elder Creek on the west (Sacramento County 2025d).
NewBridge Specific Plan	The Sacramento County Board of Supervisors adopted the final EIR and approved the project on October 6, 2020. The NewBridge Specific Plan application was accepted and initiated by the Board on February 7, 2012. The NewBridge Specific Plan encompasses approximately 1,095 acres, consisting of 853 acres owned by East Sacramento Ranch, 132 acres owned by Triangle Rock/Vulcan Minerals, and 110 acres clustered in the southwest corner of the Specific Plan area owned by a number of individuals (Sacramento County 2025e).
Coyote Creek Agrivoltaic Ranch Project	The Coyote Creek Solar Project proposes development of a 200-megawatt photovoltaic solar energy generation facility on parcels that total 2,555 acres. The project site is located in unincorporated Sacramento County south of U.S. 50, northwest of Rancho Murrieta, and southeast of the Prairie City State Vehicle Recreation Area (Sacramento County 2022).
Sloughhouse Solar Project	The Sloughhouse Solar project is a 50-megawatt photovoltaic solar energy generation facility on an approximately 380-acre project site in the Cosumnes community of unincorporated Sacramento County. The project site is generally located south of Jackson Highway, southeast of the Cosumnes River, west of Dillard Road, and south of Meiss Road in the Cosumnes community in unincorporated Sacramento County (Sacramento County 2023). The final EIR was adopted and the project was approved by the Sacramento County Board of Supervisors on January 9, 2024.
Carli Mine Expansion	The Carli Mine Expansion project consists of a 161-acre expansion of an existing surface mine of 394 acres (Sacramento County 2020).

Sources: Sacramento County 2020, Sacramento County 2022, Sacramento County 2023, Sacramento County 2025a, Sacramento County 2025b, Sacramento County 2025c, Sacramento County 2025d, Sacramento County 2025e
Notes
EIR = Environmental Impact Report
U.S. 50 = U.S. Highway 50

The following discussion analyzed cumulative impacts of the project in light of the above listed projects.

4.4.1 Aesthetics

The project site is generally flat and current (and historic) use is agricultural production. The dominant landcover includes irrigated pastures and croplands with surrounding land uses that include low-density residential, cattle grazing, croplands, and existing open space preserves. Frye Creek runs between the northern and southern areas of the project site. The majority of the region is privately owned and developed or in the process of development for agricultural, industrial, and residential uses.

As described in Section 3.1, “Aesthetics,” the project would have a less-than-significant impact related to the visual character of the area and light and glare. As a result, though there may be some cumulative changes in views, these changes would not substantially degrade the overall visual character or quality of the area or add new sources of substantial light or glare. Rather, the project would result in a minor change to the visual setting, and the change would be in character with the existing visual environment. Thus, the project would not contribute to a cumulative impact related to visual character or quality or related to light and glare. Planned projects adjacent to the Oveja Ranch Solar Project site may contribute significantly to an altered visual landscape in the area, but the contribution of this project would be minimal. The project would **not have a considerable contribution** to any significant cumulative impact related to aesthetics. In addition, the project would **not result in a new cumulatively significant impact** related to aesthetics.

4.4.2 Agriculture and Forestry Resources

Geographically speaking, cumulative impacts on agriculture should be analyzed at a local and regional level.

The proposed project would not conflict with, and no impact would occur to the following agricultural resources and land use topics: existing zoning for agricultural use, existing zoning for or cause rezoning of forest land, timberland, or zoned timberland production, or result in the loss of forest land or conversion of forest land to non-forest use. Therefore, the project would have no potential to combine with the cumulative projects listed in 4-2 above to result in a significant physical environmental impact related to these topics. Thus, there would be **no cumulative impact** related to these agricultural topics.

As discussed in Section 3.2, “Agricultural and Forestry Resources”, the proposed project would construct, operate, and maintain a PV solar power and battery storage renewable energy generation facility. The project has been designed to preserve agricultural use including irrigation on the project site. Specifically, the 30 percent project design plans avoid all existing flood irrigation infrastructure plus a 40-foot buffer. Site grading would be conducted only as needed to avoid impacting the efficiency of the flood irrigation system to preserve its full function for irrigated pasture upon completion of construction, in coordination with the landowners. The existing (and historical) agricultural uses on the

project site have included irrigated crops and forage ground for livestock. During operation of the proposed project, the project site would continue to be used for agricultural activities through flood irrigation of the pastures within the project site for forage ground, possible crop production, and the potential installation of pollinator friendly vegetation, similar to existing conditions. The proposed project anticipates long-term impacts (lifespan of the project) on 3.8 acres of Farmland of Statewide Importance, where the substation and BESS would be located. Implementation of Mitigation Measure 3.2-1 (Preserve Important Farmland) in the form of a conservation easement over Farmland of Statewide Importance at a ratio of 1:1 is proposed, the impact would be less than significant with mitigation. Other regional and local projects would also result in land development and thus the conversion of important farmland to other uses in the surrounding area. However, the project proposes mitigation at the appropriate level, consistent with guidance from the California Department of Conservation and while no new farmland would be made available, the conversion of Important Farmland attributable to the proposed project (3.8 acres) would account for less than one percent (0.002 percent) of the total Important Farmland in Sacramento County and is below the 50 acre threshold identified as significant by Sacramento County discussed below. Therefore, the project would **not have a considerable contribution** to any significant cumulative impact related to converting Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.

Any project in Sacramento County that would convert over 50 acres of farmland to non-agricultural use would be required to mitigate the loss, per the Sacramento County General Plan Agricultural Element, Policy AG-5. The cumulative projects and the proposed project would be required to comply with this policy and implement mitigation measures as required by the General Plan to reduce impacts related to the conversion of agricultural land to non-agricultural use. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project result in a **less-than-cumulatively-considerable contribution** to impacts from conversion of agricultural land to non-agricultural use.

4.4.3 Air Quality

Air quality effects are generally considered to be basin-wide, which for the proposed project is the Sacramento Valley Air Basin (SVAB). As discussed in Section 3.3, “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 2021a). For cumulative impacts, SMAQMD states that, as a result of SMAQMD’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 2021a).

Sacramento County is currently in nonattainment for ozone and PM_{10} with respect to the California Ambient Air Quality Standards, and in nonattainment for ozone and $PM_{2.5}$ with respect to the National Ambient Air Quality Standards. As such, a significant cumulative adverse air quality impact already exists within Sacramento County with respect to ozone precursors (i.e., oxides of nitrogen [NO_X] and reactive organic gases [ROG]) and particulate matter (i.e., PM_{10} and $PM_{2.5}$).

Project construction activities would result in NO_X emissions that would exceed SMAQMD-recommended threshold of significance. Mitigation Measures 3.3-1a (Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction), 3.3-1b (Reduce Off-Road Equipment Exhaust-Related Emissions During Construction), 3.3-1c (Submit Construction Emissions Control Plans), and 3.3-1d (Off-site Construction Mitigation) would reduce construction-related emissions 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 3.3-1a through 3.3-1d, construction-related emissions would be reduced to a level below the thresholds of significance and the proposed project would **less than cumulatively considerable**.

Operation of the proposed project would generate PM emissions that would exceed SMAQMD's zero threshold for PM emissions; therefore, implementation of Mitigation Measure 3.3-1e (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 3.3-1e, the proposed project's operational PM emissions would not exceed the applicable project-level PM thresholds and would be **less than cumulatively considerable**.

Furthermore, the project consists of a large-scale renewable energy facility that would contribute to the use of renewable energy resources in the State and would, over the operational lifetime of the project, reduce criteria air pollutants from electricity generation in the State and in the SVAB. Therefore, with mitigation the proposed project would have a **less-than-cumulatively-considerable contribution** to the significant cumulative impact associated with regional air quality.

4.4.4 Biological Resources

Past development in Sacramento County, ranging from conversion of land to agricultural production more than a hundred years ago to recent expansion of urban development, has resulted in a substantial loss of habitat and conversion of native natural communities to other uses. This land conversion has benefited a few species, such as those adapted to agricultural uses, but the overall effect on native plants, animals, and habitat has been adverse. Although most future projects proposed in the region would be required to mitigate significant impacts on terrestrial biological resources, in compliance with CEQA, the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and other state, local, and federal statutes, many types of common habitats and

species are provided no protection. A habitat conservation plan/natural community conservation plan, the South Sacramento Habitat Conservation Plan (SSHCP) has been adopted for the region. However, the proposed project is not a covered activity under the plan, and many of the cumulative projects considered in this analysis were either approved prior to approval or are not covered activities either, though some are. Given the overall projection of continued development in the County, including residential, industrial and solar, habitat conversion will continue it can be expected that the net loss of native habitat for plants and wildlife, agricultural lands, and open space areas that support important terrestrial biological resources in Sacramento County will also continue. Thus, cumulative habitat loss in the area is already significant.

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, current, and probable future projects that could affect similar biological resources. The SSHCP Plan Area is used as the area of analysis for cumulative effects – it is sufficiently large to address regionwide and population-level effects to biological resources addressed in this EIR, it encompasses the project site, and has recently been evaluated for the cumulative effects of development over the 50-year lifespan of the HCP.

As described in detail in Impacts 3.4-1 through 3.4-14 in Section 3.4, “Biological Resources”, the project could result in residual less-than-significant impacts (with mitigation) on special-status wildlife; therefore, this cumulative impact analysis addresses these potential impacts.

While the project is not covered by the SSHCP, the proposed project’s mitigation strategy is comparable to the mitigation standards applicable to covered activities under the SSHCP and the cumulative context for this analysis is described in the cumulative effects analyses from the recent Final Environmental Impact Statement/Environmental Impact Report South Sacramento Habitat Conservation Plan (SSHCP FEIS/EIR) (Sacramento County and USFWS 2018), which describes the effects of past and present actions within the South Sacramento County area (i.e., SSHCP Plan Area), such as from agricultural, urban development, infrastructure, mining, and land preservation (see Sections 3.7.1 and 3.7.2 in Sacramento County and USFWS 2018); and the effects of probably future actions including the specific plan areas in Sacramento County that are also included in Table 4-2, Cumulative Projects List. Additional reasonably foreseeable project developments which could contribute additional incremental impacts not addressed in the SSCHP analysis, include other solar developments and future mine projects identified in Table 4-2.

Effects of past and present projects have contributed a significant cumulative impact on special-status wildlife, as reflected by the special status (i.e., rarity) assigned to each of these species currently. The proposed project would be required to implement mitigation measures, as identified in Section 3.4, “Biological Resources”, that would largely avoid the direct loss of individuals of any special-status wildlife species and minimize impacts on their habitats. Other cumulative projects would also be required to implement similar avoidance and minimization measures (SSHCP) or mitigation measures (other CEQA

documents) that would also result in avoiding the direct loss of special-status wildlife. Any residual harassment or temporary displacement of special-status wildlife to adjacent or nearby mitigation lands would be collectively minor and would not likely result in any measurable population level impact. Mitigation measures include provisions to reduce, avoid, and/or compensate for impacts in accordance with the requirements of ESA and CESA and other regulatory programs that protect habitats, such as CWA Section 404 and the Porter-Cologne Water Quality Act, and in compliance with Sacramento County goals and policies for resource protection and with the SSHCP's goals for species and habitat conservation. Through full implementation of the mitigation measures, potential project-related impacts would be avoided, reduced, or compensated to such an extent that they are not expected to result in a considerable contribution to a cumulative impact. Therefore, the project would **not have a considerable contribution** to any significant cumulative impact related to biological resources. In addition, the project would **not result in a new cumulatively significant impact** related to biological resources.

4.4.5 Cultural Resources

Cumulative development in Sacramento County could significantly impact historical and archaeological resources. The archaeological and historical resources in their original contexts are crucial in developing an understanding of the past social, economic, and technological character of cultural resources. Because all significant cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number of significant cultural resources, all adverse effects erode a dwindling resource base. The loss of any one archaeological site could affect the scientific value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region.

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 analysis of the records search, literature search, AB 52 consultation in support of the project, and field surveys, implementation of Mitigation Measures 3.5-1 (Halt Ground-disturbing Activity Upon Discovery of Subsurface Archaeological Features) and 3.5-2 (Halt Gound-disturbing Activity Upon Discovery of Human Remains) would be required. Implementation of these mitigation measures is expected to reduce impacts to unanticipated subsurface archaeological features or 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.

4.4.6 Energy

Impacts related to electricity are generally restricted to the SMUD service area, since SMUD is the sole electricity provider for the area occupied by the proposed project. Energy impacts associated with equipment and vehicle use are generally restricted to the average travel radius of commuting workers and vehicle trips associated with equipment delivery, because these are the areas in which energy sources would be demanded and supplied for the project. The project would use energy during construction, and operation and maintenance, and thus, could contribute to potential cumulative impacts during any of these phases.

The proposed project would increase SMUD's overall power generation capacity and portfolio of eligible renewable resources contributing to its overall power mix. When considered in the context of the proposed renewable resource power that would be generated as a result of the proposed project, the project would generate much more energy than would be required to run the operations and maintenance components of the proposed operations. In short, the proposed project would serve the cumulative demand on energy resources in the area. In addition, the proposed project would also assist California utilities in meeting their obligations under State energy storage targets. **No significant adverse cumulative effect would result** relating to electricity use; instead, a beneficial cumulative impact on energy resources would result.

No existing significant adverse conditions related to efficiency of fuel use were identified that would be worsened or intensified by the proposed project. Past, current, and probable 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. In the event of a future shortage, higher prices at the pump would curtail unnecessary trips that could be termed "wasteful" and would moderate choices regarding vehicles, equipment, and fuel efficiency. 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**.

4.4.7 Geology, Soils, and Paleontological Resources

Impacts on geology and soils are generally localized and do not result in regionally cumulative impacts. Unless a project would alter the soils and rock underlying other adjacent projects or affect surrounding land because of landslides, impacts related to geology, soils, and seismic hazards would be limited to the project site. Therefore, the geographic scope of cumulative impacts related to geology, soils, seismic hazards, or paleontological resources only includes projects that overlap the project site. There are

no related projects considered in this cumulative analysis that would overlap the project site (with the exception that a portion of the distribution line alignment would overlap with three specific plan areas, but the construction/upgrades of the distribution line would not be expected to inhibit the specific plans to be implemented in these areas). Regardless, construction of related projects would be conducted in accordance with all applicable codes and regulations and seismic safety requirements and recommendations contained in project-specific geotechnical reports. It is anticipated, therefore, that any potential impacts associated with geologic and soil conditions would be mitigated within the respective sites of these projects. Therefore, no additive effect would result from construction of the proposed project, and the project would not contribute to any cumulative impact related to geology or soil instability.

Project impacts from strong seismic ground shaking and project impacts on soil erosion and topsoil removal would be less-than-significant.

The project has the potential to result in accidental damage to or destruction of unique paleontological resources; however, implementation of Mitigation Measure 3.7-1 (Avoid Impacts to Unique Paleontological Resources) would reduce potential impacts such that they would not be cumulatively considerable. This mitigation measure would require a qualified archaeologist or paleontologist to provide construction worker personnel education regarding the potential to encounter fossils, and the preparation and implementation of a recovery plan if a unique paleontological resource was identified. The implementation of this mitigation measure would reduce the impact to less-than-significant. Therefore, the project **would not have a considerable contribution** to any significant cumulative impact related to geology, soils, or paleontological resources. In addition, the project would **not result in a new cumulatively significant impact** related to geology and soils.

4.4.8 Greenhouse Gas Emissions

The discussion of greenhouse gas (GHG) emissions generated by project construction under Impact 3.8-1 in Section 3.8, “Greenhouse Gas Emissions,” 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 11,745 MT CO_2e over the 18-month to two-year construction period and would exceed the SMAQMD construction-related threshold of 1,100 MT CO_2e per year.

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 75 megawatt capacity of the facility would generate approximately 189,557 megawatt hours (MWh) per year to 196,231 MWh per year and increase SMUD’s

overall renewable electricity supply. The proposed project's operations would provide a benefit of approximately 16,259 MT CO_2e to 16,831 MT CO_2e avoided in the first year of operations. Over the life of the project (anticipated to be 34 years and 11 months, 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 3.8-1 (Implement Construction GHG Emission Best Management Practices During Construction Activities) to reduce construction-related exhaust emissions to the maximum extent feasible, the proposed project **would not have a considerable** contribution to the significant cumulative impact of global climate change. In addition, the project **would not result in a new cumulatively significant impact** related to GHG emissions.

4.4.9 Hazards and Hazardous Materials

Hazardous materials impacts associated with the past or current uses of a project site usually occur on a project-by-project basis, and are site-specific rather than regional in nature. Any hazardous materials uncovered during construction activities would be managed consistent with applicable federal, state, and local laws to limit exposure and clean up the contamination. In addition, the use, storage, transport, and disposal of hazardous materials would be managed in accordance with applicable federal and state requirements to limit risk of exposure. Other projects in the vicinity of the project would create similar hazardous material effects during standard construction activities. Current and probable future projects, including those identified in Table 4-2, would also be required to comply with measures that would minimize and/or avoid exposure of hazardous materials to people or the environment. Therefore, there would be no cumulative impact associated with hazardous materials use, storage, transport, or accidental spills.

Therefore, the project would **not have a considerable contribution to any significant cumulative impact** related to hazards and hazardous materials. In addition, the project **would not result in a new cumulatively significant impact** related to hazards and hazardous materials.

4.4.10 Hydrology and Water Quality

The project site crosses three local drainage areas: Elder Creek, Laguna Creek, and Lower Deer Creek watersheds. Approximately 4 miles of the distribution lines are located within the Elder Creek watershed, while the remaining portion of the distribution lines, all of the northern area of the project site, and a small section of the southern area of the project site are located within the Laguna Creek watershed. The remaining portion of southern area of the project site is located within the Lower Deer Creek watershed. The Elder Creek, Laguna Creek, and Lower Deer Creek watersheds are approximately 22 square miles, 48 square miles, and 45 square miles in size, respectively.

All cumulative projects considered in this analysis would be required to implement a SWPPP (if they would disturb more than 1 acre of land) and associated BMPs to minimize potential for construction-related release of pollutants and sediment into surface waters. Several of the cumulative projects would also be required to obtain and comply with Sacramento County's National Pollutant Discharge Elimination System MS4 permit and Floodplain Management permit, where required. The project site is outside of the MS4 permit boundary and does not require a grading permit from the County. Relevant cumulative projects and the proposed project would also be required to comply with the waste discharge requirements (WDRs) under the Porter-Cologne Water Quality Control Act if these projects would discharge waste into waters of the state. 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. Therefore, cumulative impacts associated with water quality degradation would not be significant, and the proposed project would **not have a considerable contribution to a significant cumulative impact related to water quality**.

The cumulative development projects would increase the amount of impervious surfaces through the development of new buildings, roads, and parking lots. For the proposed project, approximately 400 acres of existing agricultural land would be used for new solar facilities and would continue to support agricultural land uses onsite below and between the solar panels. Only 4.1 acres of new impervious surface for the BESS and substation foundation would be added to the Project site. Access roads and solar fields would not be paved or otherwise converted to new impervious surfaces. The proposed project would only decrease the permeable surface area at the project site by 1 percent, hence it would not interfere substantially with groundwater recharge. During construction, two onsite wells are expected to be used during development of the southern area of the project and one local well is expected to be used during development of the northern area of the project site. These wells would also be used during the operations and maintenance phase of the project in addition to continuing existing agricultural practices.Therefore, the proposed project would **not have a considerable contribution** to a significant cumulative impact related to groundwater recharge or sustainable groundwater management of the basin.

The cumulative projects and the proposed project are required to reduce the post-development peak stormwater discharge and volume of stormwater runoff to pre-development levels. This is commonly achieved through the use of detention basins, which are sized to hold projected stormwater runoff and meter the resulting discharge so that it is released slowly over a longer period of time. Peak discharges for existing conditions and the proposed (post-project) conditions were modeled in the 2025 Preliminary Drainage Report using the HEC-HMS software package developed by the U.S. Army Corps of Engineers. Overall, for the project site, the analysis indicates that the project would have minimal adverse effects on the existing drainage areas, runoff patterns, and peak flow rates both on-site and off-site and would not result in the need for detention basins onsite. The addition of impervious areas would only marginally increase runoff in certain areas of the project site. The analysis also indicates that total runoff would

be lower with implementation of the proposed project compared to existing conditions. Therefore, cumulative impacts associated with alteration of drainage patterns or the addition of impervious surfaces that would result in substantial erosion, exceed storm drainage system capacity, or provide substantial additional sources of polluted runoff would not be significant, and the proposed project would **not have a considerable contribution** to a significant cumulative impact.

As shown in Exhibit 3.10-1, FEMA has mapped the area surrounding Laguna Creek as a 100-Year Floodplain and has identified cross-sections at selected points along the streambed with anticipated base flood elevations (i.e., the water surface elevation) during a flood event. While the area surrounding Laguna Creek is at risk of flooding, the primary project components (i.e., PV arrays, BESS, and substation), would be constructed within areas mapped as Zone X for minimal flood risk. Approximately 8 or 9 of the proposed distribution line poles may be sited within the 100-Year Floodplain. However, the number of these poles would be limited, and the aggregate footprint would be too small to affect local flooding. Therefore, the proposed project would **not have a considerable contribution** to a significant cumulative impact from substantial alteration of drainage patterns or the addition of impervious surfaces that would result in increased flooding, or impede or redirect flood flows.

With respect to impacts from release of pollutants in a flood hazard zone, construction of the proposed project would occur in Zone X, an area of minimal flood hazard. Some of the related projects may occur within a FEMA 100-year flood zone. Projects in the vicinity being proposed in a flood zone would need to implement avoidance, minimization, and/or mitigation measures to reduce impacts. It is anticipated that the cumulative projects would be required to implement measures through CEQA documents to avoid and minimize downstream transport of pollutants. Therefore, the proposed project would **not have a considerable contribution** to a significant cumulative impact related to pollutant release from project inundation.

Overall, the project would **not have a considerable contribution** to any significant cumulative impact related to hydrology and water quality. In addition, the project would **not result in a new cumulatively significant impact** related to hydrology and water quality.

4.4.11 Land Use and Planning

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 4-2 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.

As detailed in Section 3.11, “Land Use and Planning”, the proposed project would construct, operate, and maintain a PV solar power and battery storage facility interconnected to SMUD’s distribution grid. This project would typically be categorized as Commercial II Solar Facilities by the Sacramento County Zoning Code and approval of a

Use Permit would typically be required for this use under the AG-80 zoning designation. However, the proposed project is exempt from such permitting as Government Code Section 53091(e) provides an exemption from that zoning ordinance requirement for power generation facilities which are owned and operated by public utilities (Sacramento County 2024).

The land underlying the site is subject to Williamson Act contracts 69-AP-023.2, 69-AP-023.6, and 69-AP-023.5. The Williamson Act contracts cover the entire legal parcels and therefore include more land area than required for the proposed project. Currently, the Williamson Act contracts for these parcels do not include solar PV facilities as a compatible use. As such, the property owners intend to amend their contracts to allow for solar PV facilities and battery energy storage in conjunction with agricultural activities. After construction is complete, the project would continue to use the land for agricultural activities through continued flood irrigation of the pastures within the project site for grazing, possible crop production, and the potential installation of pollinator friendly vegetation. Vegetation would grow under and between the arrays to prevent erosion and provide forage for sheep to graze. The grazing lands would be irrigated using the existing flood irrigation system, which would be preserved during construction to ensure that it remains functional during project operations.

For the reasons above, 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.

Overall, the project **would not have a considerable contribution** to any significant cumulative impact related to land use and planning. In addition, the project **would not result in a new cumulatively significant impact** related to land use and planning. 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.

4.4.12 Mineral Resources

As discussed in Section 3.12 “Mineral Resources,” the proposed project would have no impact on mineral resources, and thus **would not have a considerable contribution** to any significant cumulative impact related to mineral resources. In addition, the project **would not result in a new cumulatively significant impact** related to mineral resources.

4.4.13 Noise

When determining whether the overall noise (and vibration) impacts from related projects would be cumulatively significant and whether the project’s incremental contribution to any significant cumulative impacts would be cumulatively considerable, it is important to

note that noise and vibration are localized occurrences; as such, they decrease rapidly in magnitude as the distance from the source to the receptor increases. Therefore, only those related projects that are in the direct vicinity of the proposed project site are relevant in a cumulative context.

As described in Section 3.13, “Noise”, surrounding land uses immediately adjacent to the project site include agricultural fields and existing open space preserves with seasonal wetland, riparian, and annual grassland vegetation. Noise-sensitive land uses in the vicinity of the project site include the residential properties to the east, west and south of the project site and along the project line routes. The nearest noise-sensitive uses would be located 50 feet to 2,500 feet from the project activities. The dominant noise source identified during the ambient noise survey was vehicular traffic on area roadways.

Implementation of the proposed project would produce temporary construction-related noise. As described in Chapter 2, “Project Description”, 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 early morning or evening hours to meet weather restriction parameters (i.e., excessive heat). Mitigation Measure 3.13-1 (For Construction Outside of Permitted Construction Hours ((Section 6.68.090[e] of the County of Sacramento Code)), Implement Noise-Reducing Construction Practices and Monitor and Record Construction Noise near Sensitive Receptors) would require a variety of measures to reduce exposure to construction-generated noise and avoid significant construction noise impacts associated with the project outside of permitted construction hours. Thus, the incremental contribution of the project to this significant cumulative impact would not be cumulatively considerable. Cumulative projects listed in Table 4-2, above, would be required to comply with applicable noise regulations and mitigation from environmental documents prepared for these projects to reduce construction-related noise impacts from other projects in the immediate vicinity of the project site. Construction projects occurring simultaneously would not result in cumulative noise or vibration impacts unless sites are being developed in close proximity to one another and expose sensitive receptors to significant noise levels at the same time. Because the closest sensitive uses are approximately 50 feet of the project site boundary, and there are no other projects within 50 feet of the residences or in close proximity of the proposed project, any other construction occurring simultaneously would not be cumulatively considerable. Therefore, a cumulatively significant impact would not occur, and the proposed project would **not result in a cumulatively considerable contribution** to impacts associated with short-term construction-related noise and vibration.

Additionally, operation of the project is not expected to result in any discernable noise as the daily operation of the project and the associated stationary equipment is not likely to generate a substantial amount of noise. Therefore, the possibility of cumulatively significant noise impacts would be limited to the construction phases of the project.

Therefore, the project would **not have a considerable contribution** to any significant cumulative impact related to construction noise. In addition, the project would **not result in a new cumulatively significant impact** related to construction noise.

The project is expected to generate a minimal number of operational trips per day associated with operation and routine maintenance activities. Therefore, the possibility of cumulatively significant transportation and/or traffic impacts would be limited to the construction phases of the project.

The proposed project would result in temporary increases in roadway traffic noise associated with project construction. Construction-generated traffic volume from movement of construction equipment and materials could expose sensitive receptors to noise levels along on- and off-site roadways that would not exceed the applicable noise standards and/or result in a substantial increase in ambient noise levels.

During the construction of the proposed project, there would be a temporary increase in construction-related traffic from delivery trucks and construction workers traveling to and from the project sites. The expected number of construction workers onsite daily would vary by construction phase, with an expected daily average of 13 workers and a peak of 15 daily workers for the initial construction phase (site preparation) to up to a daily average of 219 workers and a maximum of 263 daily workers during the main construction phase (building/infrastructure construction). As described in Section 3.13, “Noise”, the project’s impacts related to construction noise, including that resulting from construction-related traffic, which occurs during daytime hours conforming to the County Noise ordinance, is considered less than significant. Similar to the proposed project, any cumulative projects would be required to comply with the County’s Noise ordinance, and if that would not be possible, they would need to implement similar mitigation measures to Mitigation Measure 3.13-1 (For Construction 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).

Therefore, the project would **not have a considerable contribution** to any significant cumulative impact related to construction-generated traffic noise. In addition, the project would **not result in a new cumulatively significant impact** related to construction-generated traffic noise.

4.4.14 Population and Housing

As discussed in Section 3.14 “Population and Housing,” the proposed project would have no impacts on unplanned growth or displacement of existing people or housing.

The geographic context for the cumulative impacts associated with the potential inducement of population growth includes cities and unincorporated communities within Sacramento County. Cumulative effects could result from the combination of the incremental impacts of the proposed project with ongoing impacts of past projects as well

as the other present reasonably foreseeable future projects developed within the geographic scope.

There are many variables that can affect the maximum workforce required for any particular project, making it difficult to estimate employment levels, or their potential to overlap, with any certainty. In general, solar PV facilities do not induce substantial population growth, as they do not create substantial numbers of permanent jobs. Thus, the proposed project, in combination with other projects in the cumulative scenario, would not be likely to induce population growth, as construction of these facilities is temporary in nature, and the operation and maintenance of these activities require very few personnel. Additionally, the County's General Plan governs growth, development, and land use decisions within the County's jurisdiction and all development proposed within the County must be consistent with such governance.

Thus, construction or operation of the proposed project and other past, current, and probable future projects within the County (the geographic area of cumulative concern) **would not have a considerable contribution** to any significant cumulative impacts to indirect unplanned population growth. The proposed project **would not result in a new cumulatively significant impact** related to unplanned population growth or the displacement of people or housing.

4.4.15 Public Services

The geographic area evaluated for cumulative impacts on public services varies depending on the public services being evaluated. For potential cumulative impacts on fire protection resources, the geographic area evaluated consists of the territory served by the Sacramento Metropolitan Fire District, which is the fire protection service that serves the project area. The Sacramento Metropolitan Fire District is divided into nine service divisions. The project site falls under Division 9, which serves an area of 143 square miles. The list below shows the Sacramento Metropolitan Fire District division that serves each of the cumulative projects listed in Table 4-2:

- Florin Vineyard Community Plan — Division 4
- Mather South Community Master Plan — Division 4
- West Jackson Highway Master Plan — Divisions 4 and 9
- Jackson Township Specific Plan — Division 4
- Vineyard Springs Comprehensive Plan — Division 9
- North Vineyard Station Specific Plan — Divisions 4 and 9
- NewBridge Specific Plan — Divisions 4 and 9
- Coyote Creek Agrivoltaic Ranch Project — Division 8
- Sloughhouse Solar Project — Division 9
- Carli Mine Expansion — Division 9

Because the project would not result in unplanned population growth and would not increase demand for fire protection services, fire service impacts related to the proposed project would be less than significant. Construction, operation, and maintenance activities

associated with the project could increase demand for fire protection services, as workers would be on site both during construction and operations. However, compliance with all applicable regulations would minimize the risk of fire to the extent that no new fire protection service facilities would need to be constructed or expanded. The projects listed above would also have to comply with federal, state, and local regulations related to fire risk reduction and would need to analyze the need for new or expanded fire protection services prior to approval. Because the fire service areas are divided into different divisions and each project would be required to comply with federal, state, and local regulations, the project **would not have a cumulatively considerable contribution** to fire protection services.

For cumulative impacts on police protection, the geographic area evaluated is the territory served by the Sacramento County Sheriff's Central District 6. The project could increase the need for police protection during construction, maintenance, and operations, as workers would be on site during those times. During operations, one regular onsite employee may be required for approximately half the work week, and some personnel may visit the site to monitor, maintain, and if needed, repair the system as needed. The entire project site would be fenced with a 6-foot security fence to restrict access to authorized personnel only and the proposed substation would have a 10-foot security fence along its perimeter. Given the small number of temporary and permanent workers and security features, the project **would not have a cumulatively considerable contribution to** police protection services.

The proposed project would have no impact on schools, parks, or other public facilities and would **not have a cumulatively considerable contribution** to impacts on these public facilities.

Overall, the project **would not have a considerable contribution** to any significant cumulative impact related to public services. In addition, the project **would not result in a new cumulatively significant impact** related to public services.

4.4.16 Recreation

Geographically speaking, cumulative impacts on recreation should be analyzed at a local and regional level. As discussed in Section 3.16 "Recreation" the Oveja Ranch Solar Project would have no impact on recreation within Sacramento County. The project's impacts on recreation are considered significant if the project would lead to an increase in the use of the recreation facility, thereby resulting in accelerated deterioration, or if the project includes or would require the construction of recreational facilities, potentially resulting in an adverse physical effect on the environment. This project does not include the construction of any parks or recreation facilities. Additionally, this project would not contribute to planned or unplanned population growth, resulting in the increased use and accelerated deterioration of any nearby parks.

Thus, construction of this proposed project **would not contribute** to any significant cumulative impacts to parks or recreation facilities. Additionally, the proposed project

would not result in a new cumulatively significant impact related to parks or recreational facilities.

4.4.17 Transportation

The project is expected to generate a minimal number of operational trips per day associated with operation and routine maintenance activities. Therefore, the proposed project would **not result in a cumulatively-considerable contribution** to impacts associated operational traffic and the possibility of cumulatively significant transportation and/or traffic impacts would be limited to the construction phases of the project.

When determining whether the overall transportation and traffic impacts from related projects would be cumulatively significant and whether the project's incremental contribution to any significant cumulative impacts would be cumulatively considerable, projects that are in the vicinity of the proposed project are relevant in a cumulative context.

As described in Section 3.17, "Transportation", existing traffic volumes along the area roadways range from 2,124 to 5,242 total trips per day (Sacramento County 2024). Project construction trips represent a short-term increase in daily traffic of less than 30 percent on any area roadways. The effect on daily and peak-hour traffic volumes would be temporary, limited to the estimated 18-month to two-year construction period, and the additional vehicles would not substantially alter existing roadway capacity. Given the limited duration of construction activities, 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.

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 proposed project would implement Mitigation Measure 3.17-1 (Prepare and Implement Traffic Control Plan), which requires that SMUD or its construction contractor to prepare and implement a traffic control plan to reduce construction-related traffic and transportation impacts. Additionally, if the cumulative projects identified in Table 4-2 above were under construction, or in operation concurrent to construction of the proposed project, they could be cumulatively considerable as it pertains to roadway segment operations. Other cumulative projects identified would also be required to prepare and implement traffic control plans similar to the requirements in Mitigation Measure 3.17-1 (Prepare and Implement a Traffic Control Plan) for the proposed project. The project's traffic control plan would identify other nearby construction activities and would coordinate with these projects to minimize local and regional disruptions. Therefore, the addition of construction trips relating to the proposed project **would not be cumulatively considerable** as it pertains to roadway segment operations. Additionally, the proposed project **would not result in a new cumulatively significant impact** related to roadway segment operations or short-term construction-related traffic.

4.4.18 Tribal Cultural Resources

United Auburn Indian Community (UAIC) and Wilton Rancheria are traditionally and culturally affiliated with the project area. The Tribes have 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. One goal of both Tribes is to ensure the preservation and continuance of their cultural heritage for current and future generations.

As discussed in Section 3.18, “Tribal Cultural Resources”, no unique archaeological or Tribal Cultural Resources (TCRs) were identified in the project site and the project would have a less than significant impact on an unanticipated discovery of TCRs with implementation of Mitigation Measures 3.5-2 (Halt ground-disturbing activity upon discovery of human remains, see Section 3.5, “Cultural Resources”) and 3.18-1 (Inadvertent/Unanticipated TCR Discoveries). Implementation of these measures would reduce impacts associated with TCRs because they would require the performance of professionally and Native American accepted and legally compliant procedures for the discovery of previously undocumented significant TCRs, including cessation of construction activities proximate to the discovery and notification of the appropriate Tribal Representative(s).

However, cumulative development in Sacramento County may result in cumulatively significant impacts to TCRs due to continuing disturbance of undeveloped areas which could potentially contain TCRs that extend beyond project boundaries that contain tribal value and knowledge for California Native American tribes culturally affiliated with a geographic area. Development in Sacramento County that has occurred in the past may have resulted in adverse impacts to previously unidentified TCRs; however, state and federal laws related to TCRs such as Assembly Bill 52 provide a mechanism for consultation between California Native American tribes and lead agencies to address potential impacts of development activities on known and/or unknown TCRs.

Although inadvertent discoveries and potential impacts may have the potential to affect TCRs in present and foreseeable projects in Sacramento County, compliance with federal and state laws and implementation of mitigation measures, it is anticipated that other cumulative projects would be adequately addressed and impacts to TCRs would be reduced to the extent feasible. Therefore, while historic projects may have not involved Native American tribal representatives in a way that would identify the presence of TCRs, current and future projects would include this involvement and recommended mitigation strategies to avoid or reduce potential impacts. Given the lack of any information that any TCR could be affected by the proposed project and the implementation of Mitigation Measures 3.5-2 (Halt ground-disturbing activity upon discovery of human remains, see Section 3.5, “Cultural Resources”) and 3.18 (Inadvertent/Unanticipated TCR Discoveries), the project would result in a **less-than-cumulatively-considerable contribution** to any cumulative impact associated with TCRs in Sacramento County.

4.4.19 Utilities and Service Systems

Cumulative impacts to utilities and service systems are analyzed at a regional and local level. During construction, portable restroom facilities would be provided to construction crews and other on-site staff. During operation, the proposed project would not include the construction of permanent restrooms. The proposed project would not require or result in the relocation or construction of new or expanded wastewater collection, conveyance, or treatment facilities. The buildout of the projects listed in Table 4-2 includes multiple housing components, and thus, these projects alone would have a potentially significant cumulative impact on wastewater treatment services. Comparatively, the wastewater that would be generated from the proposed project would not contribute to the cumulative impact that current, current, and probable future projects will have on wastewater treatment facilities in the area because it would not require or result in the relocation or construction of new or expanded wastewater treatment, treatment plants, or septic systems. Thus, the project would **not have a considerable contribution** to any significant cumulative impact related to wastewater. In addition, the project would **not result in a new cumulatively significant impact** related to wastewater.

Although the cumulative development projects listed in Table 4-2 above in combination with the proposed project would incrementally increase total solid waste generation in Sacramento County, it is anticipated that the increasing rate of diversion County-wide through recycling, composting, and other methods would result in a decreasing share of total waste requiring landfill disposal. Cumulative development throughout the city would be subject to the same recycling and composting requirements, and the same construction demolition and debris ordinances that are applicable to the proposed project.

As discussed in Section 3.19 “Utilities and Service Systems,” solid waste from the proposed project would likely be disposed of at the Kiefer Landfill, which has more than sufficient capacity to hold the solid waste that would be generated through project construction and operation activities. The buildout of the specific plans and projects listed in Table 4-2 may also utilize the Kiefer Landfill, however this landfill has a large volume of landfill capacity (102.3 million cubic yards, as of 2023) available to serve the proposed project and cumulative projects and has a closure date of January 1, 2080. Given the future long-term capacity available at this landfill, 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.

As discussed in Section 3.19 “Utilities and Service Systems” the construction and maintenance of a photovoltaic (PV) energy generating facility, including a Battery Energy Storage System (BESS), substation, and distribution lines are instrumental to the scope of this project. The proposed project’s impacts on the environment are discussed extensively throughout this EIR. The project would contribute a new source of electricity

in an area where supporting infrastructure is available; therefore, it will have a beneficial cumulative impact on local utilities and service systems.

The proposed project would utilize water from groundwater sources; all other projects in the vicinity of the project site would likely utilize municipal water. The project would not have a considerable contribution to any significant cumulative impact related to water supply. In addition, the project would not result in a new cumulatively significant impact related to water supply.

This project would have no impact on natural gas utilities. Thus, construction of this proposed project would not contribute to any significant cumulative impacts to natural gas utilities. Additionally, the proposed project would not result in a new cumulatively significant impact related to natural gas utilities.

4.4.20 Wildfire

Cumulative impacts to wildfire are assessed on a regional and local level. Alone, the Oveja Ranch Solar Project would have a less-than-significant impact on wildfires in the region. The proposed project would not be within or near an SRA or on lands classified as a very high fire hazard severity zone and wildfire risks during construction and operation would be offset by compliance with fire safety and wildfire suppression measures identified Section 3.20, “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. Additionally, all cumulative projects listed above in Table 4-2 would be required to comply with all applicable local, state, and federal design, safety and fire standards Therefore, the proposed project **would not have a cumulatively considerable contribution** to any significant cumulative impact related to wildfire. In addition, the proposed project **would not result in a new cumulatively significant impact** related to wildfire.

5.0 OTHER CEQA SECTIONS

Section 15126 of the CEQA Guidelines requires that all aspects of a project be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify the following: (1) significant and unavoidable environmental effects that cannot be avoided if the project is implemented, (2) significant irreversible environmental changes that would result from implementation of the project, and (3) growth-inducing impacts of the project. Although growth inducement itself is not considered an environmental effect, it could potentially lead to foreseeable physical environmental effects, which are discussed under "Growth-Inducing Impacts" below.

5.1 Significant and Unavoidable Impacts

Section 21100(b)(2)(A) of the State CEQA Guidelines provides that an EIR shall include a detailed statement setting forth "in a separate section: any significant effect on the environment that cannot be avoided if the project is implemented." Accordingly, this section provides a summary of significant environmental impacts of the project that cannot be mitigated to a less-than-significant level.

Sections 3.1 through 3.20 of this Draft EIR describe the potential environmental impacts of the project and recommend various mitigation measures to reduce impacts, to the extent feasible. Chapter 4, "Cumulative Impacts," determines whether the incremental effects of this project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. After implementation of the recommended mitigation measures, all of the impacts associated with development of the project would be reduced to less-than-significant levels.

5.2 Significant Irreversible Environmental Changes

The State CEQA Guidelines (Section 15126) require a discussion of the significant irreversible environmental changes that would be involved in a project should it be implemented. The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms.

The project would result in the irreversible and irretrievable commitment of energy and material resources during construction and operation, including the following:

- construction materials, including such resources as soil, rocks, wood, concrete, glass, and steel;
- land area committed to new project facilities (for the project's useful life, anticipated to be 34 years and 11 months);

- water supply for project construction (for dust control and maintaining soil compaction) and operation (for periodic operation and maintenance activities including cleaning of panels); and

- energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction and operation.

The use of these nonrenewable resources is expected to account for a minimal portion of the region's resources and would not affect the availability of these resources for other needs within the region. Construction activities would not result in inefficient use of energy or natural resources. Construction contractors selected would use best available engineering techniques, construction and design practices, and equipment operating procedures. Long-term project operation would not result in substantial long-term consumption of energy and natural resources because the project would be designed using energy efficient technologies.

5.3 Growth-Inducing Impacts

5.3.1 CEQA Requirements

CEQA specifies that growth-inducing impacts of a project must be addressed in an EIR (CCR Section 21100[b][5]). Specifically, Section 15126.2(e) of the State CEQA Guidelines states that the EIR shall:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth inducement would result if a project involved construction of new housing, which would facilitate new population to an area. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);

- substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or

- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

The State CEQA Guidelines do not distinguish between planned and unplanned growth for purposes of considering whether a project would foster additional growth. Therefore, for purposes of this EIR, to reach the conclusion that a project is growth-inducing as defined by CEQA, the EIR must find that it would foster (i.e., promote, encourage, allow) additional growth in economic activity, population, or housing, regardless of whether the growth is already approved by and consistent with local plans. The conclusion does not determine that induced growth is beneficial or detrimental, consistent with Section 15126.2(e) of the State CEQA Guidelines.

If the analysis conducted for the EIR results in a determination that a project is growth-inducing, the next question is whether that growth may cause adverse effects on the environment. Environmental effects resulting from induced growth (i.e., growth-induced effects) fit the CEQA definition of "indirect" effects in Section 15358(a)(2) of the State CEQA Guidelines. These indirect or secondary effects of growth may result in significant environmental impacts. CEQA does not require that the EIR speculate unduly about the precise location and site-specific characteristics of significant, indirect effects caused by induced growth, but a good-faith effort is required to disclose what is feasible to assess. Potential secondary effects of growth could include consequences – such as conversion of open space to developed uses, increased demand on community and public services and infrastructure, increased traffic and noise, degradation of air and water quality, or degradation or loss of plant and wildlife habitat – that are the result of growth fostered by the project.

5.3.2 Growth-Inducing Impacts of the Project

Over the project's 18- to 24-month construction period, the expected number of construction workers onsite daily would vary by construction phase, with an expected daily average of 13 workers and a peak of 15 daily workers for the initial construction phase (site preparation) to up to a daily average of 219 workers and a maximum of 263 daily workers during the main construction phase (building/infrastructure construction). As of September 2024, the construction labor pool in Sacramento County is over 76,000 people (California Employment Development Department 2024). Because of the relatively small number of construction workers needed, the relatively short duration required for construction, and the available labor pool, the project is not expected to result in construction workers relocating to the area. In the long-term, only one regular onsite employee may be required for approximately half the work week, and some personnel may visit the site to monitor, maintain, and if needed, repair the system. Similar to construction, project operation would not create new employment opportunities that would increase the population of Sacramento County the surrounding areas.

One of the project objectives identified in Chapter 2, "Project Description," is to provide a renewable power resource to support SMUD Board of Directors' 2030 Zero Carbon Plan,

approved in 2021, which establishes a flexible pathway for SMUD to eliminate carbon emissions from its power supply by 2030 by developing and procuring dependable renewable resources. Although the project would contribute to SMUD's energy supply, which supports growth, the development of solar power infrastructure is a response to increased market demand for renewable energy. It would not induce new growth to the SMUD service area which includes most Sacramento County and small, adjoining portions of Placer and Yolo Counties. Sacramento County planning documents already permit and anticipate a certain level of growth in the county and in the State as a whole, along with attendant growth in energy demand. It is this anticipated growth that drives energy-production projects, not vice versa. The project would supply energy to accommodate and support existing demand and projected growth, but it would not foster new growth. Therefore, no significant impacts related to population growth would occur.

5.4 Environmental Justice Evaluation

5.4.1 Introduction

At present, there are no direct references to the evaluation of environmental justice (EJ) as an environmental topic in the Appendix G Environmental Checklist, CEQA statute, or State CEQA Guidelines; however, requirements to evaluate inconsistencies with general, regional, or specific plans (State CEQA Guidelines Section 15125[d]) and determine whether there is a "conflict" with a "policy" "adopted for the purpose of avoiding or mitigating an environmental effect" (Environmental Checklist Section XI[b]) can implicate EJ policies. As additional cities and counties comply with SB 1000 (2016), which requires local jurisdictions to adopt EJ policies when two or more general plan elements are amended, environmental protection policies connected to EJ will become more common.

"Environmental Justice" is defined in California law as the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (California Government Code Section 30107.3[a]). "Fair treatment" can be defined as a condition under which "no group of people, including racial, ethnic, or socioeconomic group, shall bear a disproportionate share of negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies" (US EPA 2011).

SMUD created the Sustainable Communities Initiative, which encompasses the framework of EJ, to help bring environmental equity and economic vitality to all communities in SMUD's service area with special attention to historically underserved neighborhoods. The initiative focuses on the development of holistically sustainable neighborhoods through partnerships and collaboration. The goal of this effort is to ensure the advancement of prosperity in the Sacramento region regardless of zip code or socioeconomic status by focusing on equitable access to mobility, a prosperous economy, a healthy environment, and social well-being. To support the initiative, SMUD teams are working internally and with community partners to improve equitable access to

healthy neighborhood environments, energy efficiency programs and services, environmentally friendly transit modes (including electric vehicles), and energy-related workforce development and economic development prospects. To the extent these goals seek to avoid environmental impacts affecting vulnerable communities, the State CEQA Guidelines already require consideration of whether a proposed project may conflict with goals that support sustainable communities. The following analysis has been provided by SMUD, as a proactive evaluation in excess of CEQA requirements, to identify any localized existing conditions to which the project, as proposed, may worsen adverse conditions and negatively impact the local community and identifies the need for implementation of additional site or local considerations, where necessary. Environmental justice issues are being considered in this CEQA document to help inform decision makers about whether the project supports SMUD's goal of helping to advance environmental justice and economic vitality to all communities in SMUD's service area and throughout the region with special attention to historically underserved neighborhoods.

5.4.2 Regulatory Context

California legislation, state agency programs, and guidance have been issued in recent years that aim to more comprehensively address EJ issues, including SB 1000 (2016), SB 535 (2012) and AB 1550 (2016), AB 617 (2017), the California Department of Justice Bureau of Environmental Justice, the California Communities Environmental Health Screening Tool (CalEnviroScreen), and the Governor's Office of Planning and Research's (OPR's) 2020 General Plan Guidelines, Environmental Justice Element. In particular, SB 1000 has provided an impetus to more broadly address EJ; coupled with the existing requirements of CEQA, it is now time to elevate the coverage of significant environmental impacts in the context of EJ in environmental documents. These other bills have also provided the necessary policy direction to address EJ under CEQA.

Senate Bill 1000

SB 1000, which was enacted in 2016, amended California Government Code Section 65302 to require that general plans include an EJ element or EJ-related goals, policies, and objectives in other elements of general plans with respect to disadvantaged communities (DACs) beginning in 2018. The EJ policies are required when a city or county adopts or revises two or more general plan elements, and the city or county contains a DAC. EJ-related policies must aim to reduce the disproportionate health risks in DACs, promote civic engagement in the public decision-making process, and prioritize improvements that address the needs of DACs (CCR Section 65302[h]). Policies should focus on improving the health and overall well-being of vulnerable and at-risk communities through reductions in pollution exposure, increased access to healthy foods and homes, improved air quality, and increased physical activity.

Senate Bill 535 and Assembly Bill 1550

Authorized by the California Global Warming Solutions Act of 2006 (AB 32), the cap-and-trade program is one of several strategies that California uses to reduce GHGs that cause climate change. The state's portion of the cap-and-trade auction proceeds are deposited in the Greenhouse Gas Reduction Fund (GGRF) and used to further the objectives of AB 32. In 2012, the California Legislature passed SB 535 (de Leon), directing that 25 percent of the proceeds from the GGRF go to projects that provide a benefit to DACs. In 2016, the legislature passed AB 1550 (Gomez), which now requires that 25 percent of proceeds from the GGRF be spent on projects located in DACs. The law requires the investment plan to allocate (1) a minimum of 25 percent of the available moneys in the fund to projects located within and benefiting individuals living in DACs; (2) an additional minimum of 5 percent to projects that benefit low-income households or to projects located within, and benefiting individuals living in, low-income communities located anywhere in the state; and (3) an additional minimum of 5 percent either to projects that benefit low-income households that are outside of, but within 0.5 mile of, DACs, or to projects located within the boundaries of, and benefiting individuals living in, low-income communities that are outside of, but within 0.5 mile of, DACs.

Assembly Bill 617

AB 617 of 2017 aims to help protect air quality and public health in communities around industries subject to the state's cap-and-trade program for GHG emissions. AB 617 imposes a new state-mandated local program to address nonvehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and toxic air contaminants. The bill requires the California Air Resources Board (CARB) to identify high-pollution areas and directs air districts to focus air quality improvement efforts through the adoption of community emission reduction programs in these identified areas. Currently, air districts review individual stationary sources and impose emissions limits on emitters based on best available control technology, pollutant type, and proximity to nearby existing land uses. This bill addresses the cumulative and additive nature of air pollutant health effects by requiring communitywide air quality assessment and emission reduction planning, called a community risk reduction plan in some jurisdictions. CARB has developed a statewide blueprint that outlines the process for identifying affected communities, statewide strategies to reduce emissions of criteria air pollutants and toxic air contaminants, and criteria for developing community emissions reduction programs and community air monitoring plans.

California Department of Justice's Bureau of Environmental Justice

In February 2018, California Attorney General Xavier Becerra announced the establishment of a Bureau of Environmental Justice within the Environmental Section at the California Department of Justice. The purpose of the bureau is to enforce environmental laws, including CEQA, to protect communities disproportionately burdened by pollution and contamination. The bureau accomplishes this through oversight and

investigation and by using the law enforcement powers of the Attorney General's Office to identify and pursue matters affecting vulnerable communities.

In 2012, then Attorney General Kamala Harris published a fact sheet, titled "Environmental Justice at the Local and Regional Level," highlighting existing provisions in the California Government Code and CEQA principles that provide for the consideration of EJ in local planning efforts and CEQA. Attorney General Becerra cites the fact sheet on his web page, indicating its continued relevance.

California Communities Environmental Health Screening Tool

CalEnviroScreen Version 4.0 is a mapping tool developed by the Office of Environmental Health Hazards Assessment to help identify low-income census tracts in California that are disproportionately burdened by and vulnerable to multiple sources of pollution. It uses environmental, health, and socioeconomic information based on data sets available from state and federal government sources to produce scores for every census tract in the state. Scores are generated using 21 statewide indicators that fall into four categories: exposures, environmental effects, sensitive populations, and socioeconomic factors. The exposures and environmental effects categories characterize the pollution burden that a community faces, whereas the sensitive populations and socioeconomic factors categories define population characteristics.

CalEnviroScreen prioritizes census tracts, based on their combined pollution burden and population characteristics score, from low to high. A percentile for the overall score is then calculated from the ordered values. The California Environmental Protection Agency has designated the top 25 percent of highest scoring tracts in CalEnviroScreen (i.e., those that fall in or above the 75th percentile) as DACs, which are targeted for investment proceeds under SB 535, the state's cap-and-trade program.

Governor's Office of Planning and Research (renamed to Governor's Office of Land Use and Climate Innovation effective July 1, 2024) 2020 Updated EJ Element Guidelines

The OPR published updated General Plan Guidelines in June 2020 that include revised EJ guidance in response to SB 1000. OPR has also published example policy language in an appendix document along with several case studies to highlight EJ-related policies and initiatives that can be considered by other jurisdictions. Section 4.8 of the General Plan Guidelines contains the EJ guidance. The guidelines offer recommendations for identifying vulnerable communities and reducing pollution exposure related to health conditions, air quality, project siting, water quality, and land use compatibility related to industrial and large-scale agricultural operations, childcare facilities, and schools, among other things. It provides many useful resources, including links to research, tools, reports, and sample general plans.

5.4.3 Sensitivity of Project Location

Community Description

As part of its Sustainable Communities Initiative, SMUD created and maintains the Sustainable Communities Resource Priorities Map which reflects several data sets related to community attributes that SMUD uses to identify historically underserved communities (SMUD 2023). One of the key components of the map is the CalEnviroScreen (Version 4.0), which identifies communities facing socioeconomic disadvantages or health disadvantages such as multiple sources of pollution. The Sustainable Communities Resource Priorities map provides an analysis of current data sets to indicate areas ranging from low to high sensitivity and can be used to describe the relevant socioeconomic characteristics and current environmental burdens of the proposed project site and surrounding areas. This map analyzes current data to indicate the local areas most likely to be underserved or in distress from environmental burdens, lack of community development, income, housing, employment opportunities, transportation, and more. The map was launched in 2020 and updated in December 2023.

The proposed project site is located in a medium-low (on a scale of low, medium-low, medium, medium-high, and high) sensitivity area per the Sustainable Communities Resource Priorities Map (SMUD 2023). The proposed project is located within census tracts 06067009326 and 06067009201, which are in the 8th percentile and 70th percentile, respectively, for overall CalEnviroScreen score. While census tract 06067009326 is not designated as a disadvantaged community under the requirements set forth by the California Environmental Protection Agency, which sets the top 25 percent of the highest scoring tracts as DACs, census tract 06067009201 is designated as a DAC by state Senate Bill 535. As described above, DACs are targeted for investment of proceeds from the State's cap-and-trade program. These investments are aimed at improving public health, quality of life and economic opportunity in California's most burdened communities, while at the same time reducing pollution that causes climate change.

The pollution burden of census tract 06067009326 was in the 7th percentile, and census tract 06067009201 was in the 87th percentile, with the most significant indicators being cleanup sites, groundwater threats, hazardous waste, and solid waste. These exposures and consequent environmental conditions caused by pollution are expected in this area due to the current land uses which includes industrial uses such as waste management areas and landfills. The population characteristics of the census tracts that contribute to the community's pollution burden and vulnerability include cardiovascular disease, unemployment, housing burden, and poverty. The population characteristics of census tract 06067009326 was in the 16th percentile and census tract 06067009201 was in the 52nd percentile, which indicate a low to medium concentration of health and socioeconomic vulnerability to pollution.

The proposed project is partially located in an Opportunity Zone and Medically Underserved Area. Additionally, the proposed project is in an area with low to medium

sensitivity for social vulnerability, meaning that the proposed project area is moderately vulnerable to adverse effects of social vulnerability such as hazards and other stressors. The proposed project is not located in the Sacramento Promise Zone or in a Poverty Area, and is not designated as an area with consistent high rates of poor health outcomes on the Health Equity index by Be Healthy Sacramento.

5.4.4 Environmental Conditions

This discussion references the analysis conducted in this Draft EIR, and provides a summary with respect to the current environmental conditions in the project area. The focus of this discussion is on environmental justice issues relevant to the proposed project.

- **Aesthetics:** The proposed project is located on relatively flat terrain from the viewpoint of passing travelers. Most roadways within and adjacent to the project area provide long segments of road with no signalized or non-signalized intersections. Viewer groups in this area consist of drivers, vehicle passengers, residents, and workers in the project area. (see Section 3.1 “Aesthetics” of this Draft EIR for additional information).

- **Air Quality:** The project site is located in an undeveloped agricultural area south of the City of Rancho Cordova and north of Wilton. Nearby uses are largely agricultural and industrial. Nearby sensitive receptors include single rural residences east of the project site along Eagles Nest Road and southeast of the project site along Calvine Road and Excelsior Road (see Section 3.3 “Air Quality” of this Draft EIR for additional information).

- **Cultural Resources and Tribal Cultural Resources:** No cultural resources were identified by the records search or pedestrian survey completed for the proposed project. No unique archaeological resources or TCRs were identified on the project site and the NAHC Sacred Lands Database search was negative (see Section 3.5, “Cultural Resources” and Section 3.18 “Tribal Cultural Resources,” of this Draft EIR for additional information).

- **Energy:** The project area is served by SMUD, which offers Greenergy Local Renewable and SolarShares options offering electricity generated with 100 percent renewable resources (see Section 3.6 “Energy” for additional information).

- **Greenhouse Gas Emissions:** The project area would likely be subject to increased heat stress from climate change (see Section 3.8 “Greenhouse Gas Emissions” for additional information).

- **Hazards and Hazardous Materials:** The project site is not identified as a hazardous materials site (see Section 3.9 “Hazards and Hazardous Materials” for additional information).

- **Noise:** The principal noise source near the project site is vehicular traffic on nearby roadways. Noise from the agricultural activities and noise from distant railways, and from overhead aircraft also contribute to a lesser extent to the existing noise environment. Noise-sensitive land uses in the vicinity of the project site include the residential properties to the east, west and south of the project site and along the project line routes. The nearest noise-sensitive uses would be located 50 feet to 2,500 feet from the project activities (see Section 3.13 “Noise” for additional information).

- **Population and Housing:** The proposed project would be built on land currently used for agriculture and there are no homes or people living within the project site (see Section 3.14 “Population and Housing” for additional information).

- **Public Services:** Public services such as police and fire protection are available in the area and provided by Sacramento County Sherriff’s Department and Sacramento Metropolitan Fire District (see Section 3.15 “Public Services” for additional information).

- **Recreation:** The nearest park is approximately 0.5 miles west of the project site (see Section 3.16 “Recreation” for additional information).

- **Transportation:** The project site is accessible via Florin and Eagles Nest roads. No bus stops, pedestrian, or bicycle facilities are located near the project site (see Section 3.17 “Transportation” for additional information).

- **Utilities:** Onsite and local groundwater wells provide water for agricultural irrigation. There is existing SMUD electrical infrastructure in the project site and vicinity (see Section 3.19 “Utilities and Service Systems” for additional information).

5.4.5 Evaluation of the Project’s Contribution to a Community’s Sensitivity

As noted previously, SMUD proposes to build and operate a photovoltaic (PV) solar power and battery storage renewable energy generation facility interconnected to SMUD’s distribution grid in unincorporated southeastern Sacramento County. SMUD is proposing to construct PV solar panels, a battery energy storage system (BESS), a substation, and new and upgraded distribution lines to interconnect the project to SMUD’s existing distribution system. The project’s contributions to the community’s sensitivity are as follows:

- **Aesthetics:** Implementation of the project would result in the construction and operation of a PV solar power and battery storage renewable energy generation facility. Visual simulations of the project were prepared and analyzed. Impacts to quality of public views and public viewers, including travelers, is considered less than significant. The proposed project has the potential to some glare that could on occasion be experienced by motorists travelling on nearby roads, as detailed in

the glare analysis and analyzed in Section 3.1. Aesthetics of this EIR. However, this impact is less than significant.

- **Air Quality:** Some excavation, grading, and general construction activities would be required for the proposed project. As detailed in Section 3.3, "Air Quality," of this EIR, the primary emissions-generating activities associated with the proposed project would occur during the construction phase. During construction, 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 CAAQS or NAAQS. However, implementation of Mitigation Measure 3.3-1a through Mitigation Measure 3.3-1e would ensure the project's construction emissions would be reduced to a level below the thresholds of significance and would not conflict with air quality plans applicable to the SMAQMD. Because of the intermittent and temporary nature of construction activities at any given location and the dispersive properties of TACs, temporary construction activities would not expose sensitive receptors to substantial TAC concentrations. Further, 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.

  Operations of the proposed project would only require minimal vehicle and equipment use to support daily and intermittent operations and maintenance requirements. However, implementation of the above listed mitigation measures would ensure reduction in emissions.

- **Cultural Resources and Tribal Cultural Resources:** As noted in Section 3.5, "Cultural Resources," and Section 3.18, "Tribal Cultural Resources," of this Draft EIR, no known cultural or Tribal cultural resources were identified on the project site. However, mitigation measures identified in Sections 3.5 and 3.18 would be implemented to reduce (to the extent feasible) significant impacts to any unanticipated discoveries.

- **Energy:** The project would not affect access to electricity because it would not preclude access to electrical service in the vicinity, which would be maintained throughout construction. Once operational, the project would increase SMUD's renewable power resources and overall generation capacity, resulting in a net increase in renewable energy resources.

- **Greenhouse Gas Emissions:** The project would not worsen the area's existing vulnerabilities because it 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.

- **Hazards and Hazardous Materials:** The use and handling of hazardous materials during construction would be conducted in a manner consistent with existing regulations, including California Code of Regulations Title 27. Upon completion of

construction, on-site operations that would involve the use, transport, or disposal of potential hazardous materials, would follow federal and state laws regarding those hazardous materials.

- **Noise:** Major noise-generating construction activities could include site grading and excavation, installation of infrastructure, and paving. However, construction noise, including that resulting from construction-related traffic, would occur during daytime hours conforming to the Sacramento County Noise ordinance. Implementation of Mitigation Measure 3.13-1 would reduce impacts from temporary exposure of sensitive receptors to noise outside permitted construction hours by eliminating certain construction activities at night (i.e., pile driving), using noise enclosures, and locating construction equipment away from sensitive receptors. Construction would not expose persons to or generate excessive groundborne noise or vibration at the nearest sensitive receptors. Operations of the solar panels would be nearly silent, with small amounts of noise on-site caused by the tracking motors, if a tracking system is used.

- **Population and Housing:** The project would not encourage new development or generate new permanent residents.

- **Public Services:** Potential marginal increases in demand for fire protection and police protection services during construction would not affect the Sacramento County Sherriff's Department or Sacramento Metropolitan Fire District's ability to respond to community needs. Operationally, project implementation would not interrupt or otherwise affect the provision of public services to the area.

- **Recreation:** The project would not generate new permanent residents that would affect any parks or recreational opportunities.

- **Transportation:** The project site would not include any permanent changes to the public roadway network. There are no bus stops, pedestrian, or bicycle facilities located near the project site, and as a result the project would not affect these facilities.

- **Utilities:** The project would not adversely affect the provision of utilities to existing and future uses in the project area. The project is intended to provide new sources of energy to the project area.

As described for each environmental resource area above, the project would not contribute to the community's current sensitivity.

5.4.6 Summary of Environmental Justice Assessment

Per SMUD's Sustainable Communities Resource Priorities Map, which reflects several data sets related to community attributes that SMUD uses to identify historically underserved communities, the project site is located in a medium-low (on a scale of low, medium-low, medium, medium-high, and high) sensitivity area, due in part to the project

area's designation as an Opportunity Zone and Medically Underserved area, and as a DAC by state SB 535.

The proposed project has the potential to affect previously undiscovered cultural and TRCs, exceed air quality thresholds, and expose sensitive receptors to increased noise in the area; however, mitigation measures are included to reduce the potential impacts to less-than-significant levels. Further, objectives of the project include providing reliable and long-term renewable energy sources to existing customers in SMUD's service territory, which is intended to maintain or improve living conditions for residents and communities in the area. As a result, the project does not have the potential to further affect the community and/or worsen existing adverse environmental conditions. Therefore, **no existing environmental justice conditions would be worsened** as a result of the project. Although the project would not worsen existing environmental justice conditions, as a leader in building healthy communities, one of SMUD's Sustainable Communities goals is to help bring environmental equity and economic vitality to all communities. By investing in underserved neighborhoods and working with community partners, SMUD is part of a larger regional mission to deliver energy, health, housing, transportation, education and economic development solutions to support sustainable communities.

6.0 ALTERNATIVES

6.1 Introduction to Alternatives

The California Code of Regulations (CCR) Section 15126.6(a) (State CEQA Guidelines) requires EIRs to describe "… a range of reasonable alternatives to the proposed project, or to the location of the proposed 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. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will avoid or substantially lessen the significant adverse impacts of a project, and foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the "rule of reason." This section of the State CEQA Guidelines also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis is as follows:

> Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The State CEQA Guidelines require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project as proposed (CCR Section 15126.6[d]).

The State CEQA Guidelines further require that the "no project" alternative be considered (CCR Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a project with the impacts of not approving the project. If the no project alternative is the environmentally superior alternative, CEQA requires that an EIR "…shall also identify an environmentally superior alternative among the other alternatives." (CCR Section 15126[e][2]).

In defining "feasibility" (e.g., "… feasibly attain most of the basic objectives of the project…"), CCR Section 15126.6(f) (1) states, in part:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are 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 (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in an EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision making body, here the SMUD Board of Directors (Board). (See PRC Sections 21081.5, 21081[a] [3].)

6.2 Considerations for Selection of Alternatives

6.2.1 Attainment of Project Objectives

As described above, one factor that must be considered in the selection of alternatives is the ability of a specific alternative to attain most of the basic objectives of the project (CCR Section 15126.6[a]). Chapter 2, "Project Description," articulated SMUD's project objectives for the proposed Country Acres Solar Project, which are repeated below:

- Contribute to a diversified energy portfolio that will aid in the continued improvement of air quality in the Sacramento Valley Air Basin by decreasing reliance on fossil fuel combustion for the generation of electricity.
- Reduce SMUD's exposure to price volatility associated with electricity and natural gas.
- Provide a renewable power resource to support the SMUD Board of Directors' 2030 Zero Carbon Plan, approved in 2021, which establishes a flexible pathway for SMUD to eliminate carbon emissions from its power supply by 2030 by developing and procuring dependable renewable resources.
- Develop a project that will deliver a reliable, long-term supply of up to 75 MW of economically feasible solar and battery storage that provides grid resiliency at a point of interconnection on the grid managed by SMUD.
- Develop an agrivoltaics project that integrates agricultural irrigation production including sheep grazing.
- Design a flexible PV solar energy and battery storage facility that is capable of utilizing the best available, efficient, cost-effective, and proven PV solar and storage technology.

- Construct the facility in a location that has ready access to existing electrical infrastructure with available capacity and roads.

6.2.2 Summary of Project Impacts

Sections 3.1 through 3.20 of this Draft EIR address the project-specific environmental impacts of the project.

A “significant and unavoidable impact” is an impact that exceeds the defined standards of significance and cannot be eliminated or reduced to less-than-significant through the implementation of mitigation measures. With implementation of the recommended mitigation measures, no project impacts were determined to be significant and unavoidable. Potentially feasible alternatives were developed with consideration of avoiding or lessening the potentially significant adverse impacts of the project. In summary, the potentially significant impacts of the project are:

Agricultural Resources

- 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 non-agricultural use (less than significant after mitigation).

Air Quality

- Conflict with or obstruct implementation of the applicable air quality plan (less than significant after mitigation).

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (less than significant after mitigation).

Biological Resources

- Loss and degradation of habitat for special-status plant species (less than significant after mitigation).

- Potential impacts on vernal pool fairy shrimp, Midvalley fairy shrimp, vernal pool tadpole shrimp, and Ridsecker’s water scavenger beetle and impacts to their habitat during construction (less than significant after mitigation).

- Potential impacts on western spadefoot during construction (less than significant after mitigation).

- Potential impacts on Western pond turtle during construction (less than significant after mitigation)

- Potential impacts on giant garter snake during construction and impacts to their aquatic habitat (less than significant after mitigation)
- Potential impacts on burrowing owl during construction and operation (less than significant after mitigation)
- Potential impacts on tricolored blackbird during construction and permanent conversion of foraging habitat (less than significant after mitigation)
- Potential impact on Swainson's hawk during construction and permanent conversion of foraging habitat (less than significant after mitigation)
- Potential impacts on greater sandhill crane and permanent conversion of foraging habitat (less than significant after mitigation)
- Disturbance of nesting white-tailed kite, northern harrier, Cooper's hawk, loggerhead shrike, song sparrow "Modesto" population, and other protected birds (less than significant after mitigation)
- Potential impacts on western red bat (less than significant after mitigation)
- Potential adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (less than significant after mitigation)
- Potential 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 (less than significant after mitigation)

Cultural Resources

- Potential adverse change in the significance of an archaeological resource pursuant to Section 15064.5 (less than significant after mitigation)
- Potential disturbance of human remains, including those interred outside of dedicated cemeteries (less than significant after mitigation)

Geology, Soils, and Paleontological Resources

- Directly or indirectly destroy a unique paleontological resource or site (less than significant after mitigation)

Greenhouse Gas Emissions

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (less than cumulatively considerable after mitigation)

Noise

- Temporary, short-term exposure of sensitive receptors to construction noise (less than significant after mitigation)

Transportation

- Substantially increase hazards due to a geometric design feature or incompatible uses (less than significant after mitigation)
- Result in inadequate emergency access (less than significant after mitigation)

Tribal Cultural Resources

- Substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

  Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

  A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe? (less than significant after mitigation)

6.2.3 Alternatives Considered but Not Evaluated Further

State CEQA Guidelines Section 15126.6(c) provides the following guidance in selecting a range of reasonable alternatives for the project. The range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project, and could avoid or substantially lessen one or more of the significant effects. An EIR should also identify any alternatives that were considered by the lead agency, but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.

To provide some background for understanding the purpose and need for the project, SMUD has designed its resource procurement plans to meet the directive by its Board of Directors to use dependable renewable resources to eliminate carbon emissions from its power supply by 2030, as described in SMUD's 2030 Zero Carbon Plan (SMUD 2021). This goal is more ambitious than required by existing law. *See, e.g.,* SB 350, which was signed into law in 2015. SB 100 accelerated the deadline for reaching the 50 percent

milestone to 2026, and 60 percent by 2030. The law also establishes as state policy that renewable energy resources and zero-carbon resources are to supply 100 percent of retail sales of electricity to California end use customers by 2045. The proposed project is an important element in helping SMUD achieve this goal.

The following alternatives were considered by SMUD but not evaluated further in this Draft EIR. A brief description of the reasons for SMUD's determination is also provided.

Offsite Alternatives

Offsite alternatives are generally considered in EIRs when one of the means to avoid or eliminate the significant impacts of a project is to develop it in a different available location. Such alternatives are especially appropriate where a proposed project would put a site to uses different than those contemplated in the governing general plan, which presumably reflects land use policies reached after much deliberation and public involvement, and also in instances where there is an ample supply of similarly situated land that could be developed for a project.

The Sacramento General Plan identifies the land use of the project site as General Agriculture and the site is zoned Agriculture 160 (AG-160) by the Sacramento County Zoning Ordinance (see Section 3.11, "Land Use and Planning"). The AG-160 zoning designation is intended to assure the preservation and sustainability of agricultural lands that have a definite value for the production of agricultural products. Permitted uses with the AG-160 zoning designation include solar energy facilities. Thus, the adopted plan pertinent to the project site envisions that the area will likely stay in long-term agricultural use.

SMUD considered a variety of locations for the project to meet its 2030 Zero Carbon Plan goals and objectives. A key goal of the 2030 Zero Carbon Plan is to interconnect projects to SMUD's existing transmission or distribution system, so the energy generated by a project can be delivered directly to SMUD customers.

Finding suitable land available for solar projects presents a formidable challenge throughout the region. Significant development and land use planning associated with expansion of residential, commercial, and industrial uses has resulted in a limited supply of land available for utility scale solar projects in Sacramento County. SMUD previously released requests for offers of land for solar in 2017 and for solar projects in 2013, 2021, and 2022 for the purpose of identifying potential projects with limited environmental impacts close to existing transmission or distribution lines. These requests for offers were unsuccessful, some yielded projects that were unviable and others received little to no response.

Given the lack of success in identifying suitable projects through requests for offers, SMUD undertook a large-scale staff driven effort to identify suitable locations for solar development. SMUD focused on potential projects on the south side of the service territory because of a need for generation in this area. Challenges arose in siting projects because multiple projects concurrently applied for rights to interconnect to SMUD''s

distribution and transmission system in the southern area and throughout SMUD's system. Adding multiple generation projects could require SMUD to invest in significant infrastructure upgrades that would be both costly and take time to implement, but certain sites are less challenging. The location of the proposed project location is one that was available for interconnection with limited additional upgrades to the SMUD system.

Evolution of the Proposed Project

The specific project location and design have evolved since their initial conception as SMUD has strived to identify the least environmentally damaging option for development of the needed solar energy capacity.

Initially, SMUD identified the project property and an additional piece of land for inclusion into a larger project for interconnection on the transmission system. An engineering assessment of the interconnection potential on the transmission system showed significant upgrades would be needed which led SMUD to reduce the size of the project. This constraint limited the output, size, and location of the potential project. The reduced project size allowed the project to interconnect on the distribution system. As a result, land for the proposed project area was identified.

Onsite Alternatives

Once potential land with available interconnection had been identified, SMUD conducted environmental assessments, including biological and cultural resource field surveys and a wetland delineation in 2024. Based on the results of these surveys, SMUD adjusted the conceptual layouts of the project footprint to further reduce potential impacts on biological resources, including minimizing impacts to wetlands. In addition to avoiding direct impacts on wetlands to the greatest extent feasible, a 250-foot setback was established around vernal pools, a 25-foot setback from seasonal wetlands, and a 100-foot setback from the main drainage canal in the southern area. Additionally, SMUD worked with the landowners to ensure development of a project that fully integrates continued agricultural production including maintaining the flood irrigation system for irrigated pasture and sheep grazing during the operational life of the proposed project.

Alternative Technologies

Rooftop and Carport Solar

Rooftop, carport and other infill solar projects are necessary to support SMUD's 2030 Zero Carbon Plan goals, and SMUD continues to pursue these options. However, meeting the goals and objectives of SMUD's 2030 Zero Carbon Plan solely through locating distributed solar resources on rooftops and carports within the desired timeframe was determined to be infeasible. Challenges included identification of enough 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. These challenges present a barrier to SMUD's ability to meet the timing for adding enough solar generation through distributed solar

technologies alone to meet the goals of the 2030 Zero Carbon Plan. Further, the cost of infill solar projects such as rooftop and carport solar is considerably higher per megawatt hour than utility scale solar projects.

Wind

Wind energy provides various benefits, including the following: it is a renewable and infinite resource; generation of wind energy is free of air emissions, including GHGs; besides construction and maintenance costs, it is a free resource; and it does not require substantial water usage. Compared with traditional energy sources, the environmental effects of wind power are relatively minor. However, wind farms would not decrease short-term construction-related air emissions and they typically result in greater adverse aesthetics impacts (because of the much taller height of wind turbines compared with solar panels, making them more visible from many viewpoints). The project area is not suitable for wind development, due to a lack of wind resources. Also, unlike the proposed project, wind turbines could result in take of avian and bat species on the project site from rotating turbine blades. Further, wind turbines would generate long term noise impacts and aesthetics impacts that would not occur under the proposed project. SMUD continues to harness wind energy at its Solano wind facility.

Nuclear Energy

Nuclear energy is a non-fossil fuel (non GHG-producing) energy resource, and unlike solar or wind energy, production of nuclear energy does not depend on the availability of sun or wind. Nuclear energy was produced at SMUD's decommissioned Rancho Seco Nuclear Generating Station from 1975 until 1989, when the facility was closed as a result of a public vote by SMUD customers. Developing a nuclear energy facility at the project site would likely be infeasible because use of nuclear power has already been rejected in the region once; it is a controversial technology because of public perception around safety and uncertainties over the disposition of spent fuel; it is relatively expensive to build and operate (compared to most, if not all, technologies); and there is overall doubt that it would ever be approved even if considered because of these factors and the nuclear fission reactor moratorium established by the CEC. Diablo Canyon, the last nuclear power plant built in California, was completed in 1986, over 30 years ago, and is the last operating commercial nuclear power plant in the state. In short, nuclear power plants do not appear to have an immediate future in California. Finally, because of their footprint, number of employees, and operating characteristics including safety risks, they would likely result in greater impacts compared to the proposed project.

6.3 Alternatives Selected for Detailed Analysis

CEQA requires consideration of a reasonable range of alternatives. In light of the extensive work SMUD has already done to screen suitable sites and modify site development to reduce impacts, the fact that all impacts can be mitigated to less than-significant, and the considerations discussed above, the two alternatives considered in this Draft EIR in addition to the no project alternatives present a "reasonable" range

because they focus on the remaining most important environmental issue: reduced footprint and farmland of statewide importance impact reduction. Alternatives evaluated are:

- **No Project Alternative:** which assumes no solar development occurs on the project site;
- **Alternative 1, Reduced Footprint Alternative:** which assumes all project facilities would be located in the southern area and the collector line connecting the northern and southern areas would not be required;
- **Alternative 2, Farmland of Statewide Importance Impact Reduction:** which assumes that the project footprint is laid out within the project site to avoid long-term impacts to Farmland of Statewide Importance. Each of these alternatives is described in more detail and analyzed below.

Each of these alternatives is described in more detail and analyzed below.

6.3.1 No Project Alternative

State CEQA Guidelines Section 15126.6(e)(1) requires that the no project alternative be described and analyzed "to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project." The no project analysis is required to discuss "the existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (Section 15126.6[e][2]).

Environmental Analysis

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 by SMUD and various permitting agencies for the project would be needed. It is unknown for how long the project site would remain in its existing condition. It is assumed that the project site would remain in long-term agricultural use; although, another compatible use could co-locate and coexist with the existing agricultural practices. It is uncertain exactly what impacts would occur: therefore, no analysis by impact topic is provided, as this would be speculative.

This alternative would not meet any of the objectives identified in Section 6.2.1, "Attainment of Project Objectives."

6.3.2 Alternative 1, Reduced Footprint Alternative

As described above in Section 6.2.3, "Alternatives Considered but Not Evaluated" under "Onsite Alternatives," the project has been modified from its originally proposed design to reduce environmental impacts to the extent feasible while still meeting the project

objectives. As described in Section 6.2.2, “Summary of Project Impacts,” the project’s impacts would be less than significant with mitigation for all resource topics. The project would result in the conversion of habitat and potential impacts to special-status species during construction. Although mitigation has been recommended to reduce these potentially significant impacts, habitat conversion would nonetheless occur. A conceptual alternative was developed to further reduce the project’s footprint and potential impacts on natural habitat. Alternative 1, the Reduced Footprint Alternative, would include construction and operation of a project with a smaller footprint and higher density design, which would compress all the project facilities into the southern area of the project site. This alternative would not use the northern area and the connector line between the southern and northern areas would not be required. Thus, the total project would be occupy approximately 454 acres rather the 534 acres of the project site. Alternative 1 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. Because this alternative would eliminate the connector line, and would also eliminate the potential impacts on special-status species that utilize Laguna Creek and its associated habitat corridor (such as Sanford’s arrowhead, western pond turtle, giant garter snake, western red bat) potential impacts on these species in these locations would be eliminated. In addition, Alternative 1 would result in less loss of foraging habitat for Swainson’s hawk, burrowing owls and other raptors because there would be 80 acres less cropland that would be used to support solar fields.

Alternative 1 would attain the objectives identified in Section 6.2.1, “Attainment of Project Objectives,” because it would involve construction and operation of a PV solar facility; avoid wetlands and other sensitive habitat areas; integrate compatible agriculture activities; locate the facility as near as possible to existing electrical infrastructure with anticipated capacity to minimize the geographical extent of impacts; utilize the best available, efficient, cost-effective, and proven PV solar technology and battery storage; and be readily accessible from existing roads.

Environmental Analysis

Agricultural Resources

Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. The generating capacity of Alternative 1 would be the same as the proposed project, but the layout would be reconfigured to fit in a smaller area. Under Alternative 1, with the removal of the northern area of the project site, 80 acres less of cropland would be used to support solar facilities for the life of the project (approximately 34 years and 11 months). However, under this Alternative it is assumed that the BESS and substation infrastructure would be in the same location as in the proposed project, and thus this alternative would impact 3.8 acres of Farmland of Statewide Importance. Therefore, implementation of Mitigation Measure 3.2-1 (Preserve

Farmland of Statewide Importance) would also apply to this alternative, and would reduce this impact to less-than-significant. Therefore, overall agricultural impacts under this alternative would be similar, but slightly less than, those of the proposed project. (*Similar, but Slightly Less*)

Air Quality

Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the project site. Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. The generating capacity of Alternative 1 would be the same as that of the proposed project, but the project layout would be reconfigured to fit in a smaller area. As such, all construction activities and resulting criteria air pollutants would be similar to, but potentially slightly less than, the proposed project. However, uncontrolled daily emissions during construction activities would exceed Sacramento Metropolitan Air Quality Management District's (SMAQMD's) thresholds for nitrogen dioxides (NO_X). Similar to the project, implementation of Mitigation Measures 3.3-1a (Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction), 3.3-1b (Reduce Off-Road Equipment Exhaust-Related Emissions During Construction), 3.3-1c (Submit Construction Emissions Control Plans), 3.3-1d (Off-Site Construction Mitigation), and 3.3-1e (Implement Best Management Practices for Reducing Operational PM Emissions) would also apply to this alternative, and would reduce these impacts to less-than-significant levels. Therefore, overall air quality impacts under this alternative would be similar, but slightly less than, those of the proposed project. (*Similar, but slightly less*)

Biological Resources

Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. The generating capacity of Alternative 1 would be the same as the proposed project, but the layout would be reconfigured to fit in a smaller area. Under Alternative 1, with the removal of the northern area of the project site, 80 acres less of cropland that provides habitat for a variety of common and special status birds would be used to support solar facilities for the life of the project (approximately 34 years and 11 months). Because this alternative would also eliminate the need for the collector line that would connect the northern area and the southern area of the project site, the impacts to special-status species that are supported by Laguna Creek, such as western pond turtle, giant gartersnake, tricolored blackbird, song sparrow ("Modesto" population), western red bat, and Sanford's arrowhead would also be reduced or eliminated. Based on the ultimate layout, all or most mitigation measures detailed in Section

3.4, “Biological Resources” for the proposed project would also be required for Alternative 1, and implementation of these mitigation measures would reduce impacts on biological resources to less-than-significant. However, the elimination of 80 acres of cropland habitat impacts and removing the collector line that would cross Laguna Creek would reduce impacts on a several biological resources, and overall biological resources impacts under this alternative would be less than those of the proposed project. (*Less*)

Cultural Resources

Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. However, because ground-disturbing activities would still occur under this alternative, there would still be a potential for disturbance to unknown archaeological sites, as well as previously unidentified human remains. Implementation of Mitigation Measures 3.5-1 (Halt ground-disturbing activity upon discovery of subsurface archaeological features) and 3.5-2 (Halt ground disturbing activity upon discovery of human remains) would apply to this alternative, and would reduce these impacts to less-than-significant. Therefore, overall impacts under this alternative would be similar to those of the proposed project. (*Similar*)

Geology, Soils, and Paleontological Resources

Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. However, because ground-disturbing activities would still occur under this alternative, there would still be a potential for accidental damage to or destruction of unique paleontological resources, if present. Implementation of Mitigation Measure 3.7-1 (Avoid Impacts to Unique Paleontological Resources) would apply to this alternative, and would reduce these impacts to less-than-significant. Therefore, overall impacts under this alternative would be similar to those of the proposed project. (*Similar*)

Greenhouse Gas Emissions

Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. As such, all construction activities and resulting GHG emissions would be similar to, but potentially slightly less than, the proposed project. Implementation of Mitigation Measure 3.8-1 (Implement Construction GHG Emission Best

Management Practices During Construction Activities) would apply to this alternative, and would reduce construction-related GHG impacts to less-than-significant.

The annual generation capacity of Alternative 1 would be the same as that of the proposed project and therefore the operational GHG benefits would be the same as those of the proposed project. Therefore, overall impacts for construction and operation of Alternative 1 under this alternative would be similar to, but slightly less than, those of the proposed project. (*Similar, but Slightly Less*)

Noise

Under this alternative, a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. As such, all construction activities would be similar to, but potentially slightly less than, the proposed project. Therefore, construction noise impacts would be similar to the proposed project. Implementation of Mitigation Measure 3.13-1 (For Construction Outside of Permitted Construction Hours ((Section 6.68.090[e] of the County of Sacramento Code)), Implement Noise-Reducing Construction Practices and Monitor and Record Construction Noise near Sensitive Receptors) would apply to this alternative, and would reduce construction noise impacts to less-than-significant. Therefore, overall impacts under this alternative would be similar to, but slightly less than, those of the project. (*Similar, but Slightly Less*)

Transportation

Under this alternative, a reduced size PV solar facility would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. As such, all construction activities would be similar, but potentially slightly less than, the proposed project. Therefore, construction-related increases to vehicle traffic on the surrounding roadway network would be similar. Implementation of Mitigation Measures 3.17-1 (Prepare and Implement a Traffic Control Plan) would also apply to Alternative 1, and would reduce transportation impacts to less-than-significant. Overall, this alternative would result in similar, but slightly less, transportation impacts compared to the project. (*Similar, but Slightly Less*)

Tribal Cultural Resources

Under this alternative, a reduced size PV solar facility would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. However, because ground-disturbing activities would still occur under this alternative, there would still be a potential for disturbance to unknown tribal cultural resources (TCRs) during

ground disturbing activities. Implementation of Mitigation Measure 3.18-1 (Inadvertent/ Unanticipated TCR Discoveries) would apply to this alternative, and would reduce this impact to less-than-significant. Therefore, overall impacts under this alternative would be similar to those of the proposed project. (*Similar*)

6.3.3 Alternative 2, Farmland of Statewide Importance Impact Reduction Alternative

As described above in Section 6.2.3, "Alternatives Considered but Not Evaluated" under "Onsite Alternatives," the project has been modified from its originally proposed design to reduce environmental impacts to the extent feasible while still meeting the project objectives.

Under Alternative 2, Farmland of Statewide Importance Impact Reduction Alternative, the site layout would be identical to the proposed project, except the substation and BESS would be relocated approximately 400 feet to the south of where it is currently located for the proposed project to avoid approximately 3.8 acres of long-term impacts to Farmland of Statewide Importance. This relocation would move the substation and BESS off of Farmland of Statewide Importance and onto Farmland of Local Importance. Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project.

Alternative 2 would attain the objectives identified in Section 6.2.1, "Attainment of Project Objectives," because it would involve construction and operation of a PV solar facility; avoid wetlands and other sensitive habitat areas; integrate compatible agriculture activities; locate the facility as near as possible to existing electrical infrastructure with anticipated capacity to minimize the geographical extent of impacts; utilize the best available, efficient, cost-effective, and proven PV solar technology and battery storage; and be readily accessible from existing roads.

Environmental Analysis

Agricultural Resources

Under this alternative, the site layout would be almost identical to the proposed project, except the BESS and Substation would be located approximately 400 feet south of where they are currently proposed, which would be within Farmland of Local Importance and would avoid long-term impacts on Farmland of Statewide Importance. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project.

Based on Appendix G of the CEQA Guidelines, the proposed project (or an alternative) would have a significant impact related to agricultural 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. Under Alternative 2, the potentially significant impact related to converting Farmland of Statewide Importance to non-agricultural use would be eliminated. Under Alternative 2, the substation and BESS would be relocated to an area designated by the FMMP as Farmland of Local Importance. Therefore, Alternative 2 would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, and there would be no permanent loss of Important Farmland as a result of the proposed project. This impact would be considered less than significant and would not require mitigation

Therefore, overall agricultural impacts under this alternative would be less than those of the proposed project and no mitigation would be required for Alternative 2 in relation to converting 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 non-agricultural use. (*Less*)

Air Quality

Under this alternative, the site layout would be almost identical to the proposed project, with the exception that the BESS and Substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. As such, all construction activities and resulting criteria air pollutants would be similar to the project. Like the proposed project, uncontrolled daily emissions during construction activities would exceed SMAQMD's thresholds for NO_X. Implementation of Mitigation Measures 3.3-1a (Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction), 3.3-1b (Reduce Off-Road Equipment Exhaust-Related Emissions During Construction), 3.3-1c (Submit Construction Emissions Control Plans), 3.3-1d (Off-Site Construction Mitigation), and 3.3-1e (Implement Best Management Practices for Reducing Operational PM Emissions) would also apply to this alternative, and would reduce these impacts to less-than-significant. Therefore, overall air quality impacts under this alternative would be similar to the proposed project. (*Similar*)

Biological Resources

Under this alternative, the site layout would be almost identical to the proposed project, with the exception that the BESS and Substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. The 4.1-acre substation and BESS footprint would be moved from an area classified as irrigated pasture to another area categorized as irrigated pasture, so there would not be a change in habitat modification between Alternative 2 and the proposed project. All mitigation measures detailed in Section 3.4,

"Biological Resources" would be required for Alternative 2 as they are for the proposed project, and implementation of these mitigation measures would reduce these impacts to less-than-significant. Therefore, overall biological resources impacts under this alternative would be similar to the proposed project. (*Similar*)

Cultural Resources

Under this alternative, the site layout would be almost identical to the proposed project, except the BESS and Substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. Because ground-disturbing activities would still occur under this alternative, in nearly the same locations, there would still be a potential for disturbance to unknown archaeological sites, as well as previously unidentified human remains. Implementation of Mitigation Measures 3.5-1 (Halt ground-disturbing activity upon discovery of subsurface archaeological features) and 3.5-2 (Halt ground disturbing activity upon discovery of human remains) would apply to this alternative, and would reduce these impacts to less-than-significant. Therefore, overall impacts under this alternative would be similar to those of the proposed project. (*Similar*)

Geology, Soils, and Paleontological Resources

Under this alternative, the site layout would be almost identical to the proposed project, except the BESS and substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. Because and ground-disturbing activities would still occur under this alternative, in nearly the same locations, there would still be a potential for accidental damage to or destruction of unique paleontological resources, if present. Implementation of Mitigation Measure 3.7-1 (Avoid Impacts to Unique Paleontological Resources) would apply to this alternative, and would reduce this impact to less-than-significant. Therefore, overall impacts under this alternative would be similar to those of the proposed project. (*Similar*)

Greenhouse Gas Emissions

Under this alternative, the site layout would be almost identical to the proposed project, except the BESS and substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. As such, all construction activities and resulting GHG emissions would be similar to the project. Implementation of Mitigation Measure 3.8-1 (Implement Construction GHG Emission Best Management Practices During Construction Activities) would apply to this alternative, and would reduce construction-related impacts to less-

than-significant. The annual generation capacity would be the same for Alternative 2 compared to the proposed project and therefore the operational GHG benefits would be the same as the proposed project. Therefore, overall impacts for construction and operation of Alternative 1 under this alternative would be similar to the proposed project. (*Similar*)

Noise

Under this alternative, the site layout would be almost identical to the proposed project, except the BESS and substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. As such, all construction activities would be similar to the proposed project. Implementation of Mitigation Measure 3.13-1 (For Construction Outside of Permitted Construction Hours ((Section 6.68.090[e] of the County of Sacramento Code)), Implement Noise-Reducing Construction Practices and Monitor and Record Construction Noise near Sensitive Receptors) would apply to this alternative, and would reduce construction noise impacts to less-than-significant. Therefore, overall impacts under this alternative would be similar to those of the project. (*Similar*)

Transportation

Under this alternative, the site layout would be almost identical to the proposed project, except the BESS and substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. As such, all construction activities would be similar to the proposed project. Therefore, construction-related increases to vehicle traffic on the surrounding roadway network would be similar. Implementation of Mitigation Measures 3.17-1 (Prepare and Implement a Traffic Control Plan) would also apply to Alternative 2, and would reduce these impacts to less-than-significant. Overall, this alternative would result in similar transportation impacts compared to the project. (*Similar*)

Tribal Cultural Resources

Under this alternative, the site layout would be almost identical to the proposed project, except the BESS and substation would be located approximately 400 feet south of where they are currently proposed. All other project components would be in the same layout as the proposed project and Alternative 2 would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. Because ground-disturbing activities would still occur under this alternative, in nearly the same locations, there would still be a potential for disturbance to unknown TCRs during ground disturbing activities. Implementation of Mitigation Measure 3.18-1 (Inadvertent/ Unanticipated TCR Discoveries) would apply to this alternative, and

would reduce this impact to less-than-significant. Therefore, overall impacts under this alternative would be similar to those of the proposed project. (*Similar*)

6.4 Comparison of Alternatives

Table 6-1 summarizes the environmental analysis provided above for the project alternatives.

Table 6-1. Comparison of the Environmental Impacts of the Alternatives in Relation to the Project

Resource Area	Project	No Project Alternative	Alternative 1, Reduced Footprint Alternative	Alternative 2, Farmland of Statewide Importance Impact Reduction Alternative
Agricultural Resources	LTS with Mitigation	Less	Similar, but Slightly Less	Less
Air Quality	LTS with Mitigation	Less	Similar, but Slightly Less	Similar
Biological Resources	LTS with Mitigation	Less	Less	Similar
Cultural Resources	LTS with Mitigation	Less	Similar	Similar
Geology, Soils, and Paleontological Resources	LTS with Mitigation	Less	Similar	Similar
Greenhouse Gas Emissions	LTS with Mitigation	Greater	Similar, but Slightly Less	Similar
Noise	LTS with Mitigation	Less	Similar, but Slightly Less	Similar
Transportation	LTS with Mitigation	Less	Similar, but Slightly Less	Similar
Tribal Cultural Resources	LTS with Mitigation	Less	Similar	Similar

Source: Compiled by AECOM 2025

6.5 Environmentally Superior Alternative

CCR Section 15126.6 suggests that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

The No Project Alternative is the environmentally superior alternative, as all of the potentially significant impacts of the project would be avoided, except there would be no GHG benefits related to operations of a new solar facility. Under the No Project Alternative, the potentially significant impacts identified for the proposed project related to the potential for the project to generate construction-related GHG emissions that may have a cumulatively significant impact on the environment would not occur. Therefore, construction-related impacts related to climate change would be reduced when compared to those of the proposed project. However, the No Project Alternative would not result in a GHG-free energy resource and would not increase SMUD's renewable energy supply. Overall, the No Project alternative would not provide the potential reduction in GHG emissions associated with electricity production under the proposed project's solar energy facilities instead of electricity generated by fossil-fuel sources. Additionally, the No Project Alternative would not meet any of the project objectives because a PV solar facility would not be constructed on the project site.

Alternative 1, the Reduced Footprint Alternative, would construct a 75-MW PV solar facility with a reduced footprint compared to the proposed project would be constructed on the southern portion of the project site only and would not include the development of PV infrastructure in the northern area of the project site. Alternative 1 would also eliminate the need for the collector line connecting the northern area to the southern area. The generating capacity of Alternative 1 would be the same as the proposed project, but reconfigured to fit in a smaller area. The elimination of 80 acres of cropland habitat impacts and removing the collector line that would cross Laguna Creek would reduce impacts on some biological resources, and overall biological resources impacts under this alternative would be less than those of the proposed project. All or most of the mitigation measures detailed in Section 3.4, "Biological Resources" would be required for Alternative 1, and implementation of these mitigation measures would reduce these impacts to less-than-significant.

Because this alternative would involve construction of a reduced footprint for the PV solar facility, all construction activities and resulting impacts associated with agricultural resources, air quality, GHG emissions, noise, and transportation would be similar to, or slightly less than, the project. Further, because this alternative would be constructed on the project site and would involve ground disturbing activities, impacts associated with cultural resources, geology, soils, and paleontological resources, and Tribal cultural resources would be similar those of the project. This alternative would meet the project objectives and would comply with California's renewable energy and greenhouse gas emission reduction laws and goals and SMUD Board of Directors' 2030 Zero Carbon Plan.

Alternative 2, the Farmland of Statewide Importance Reduction Alternative, would construct a 75-MW solar facility with BESS, and would not result in any reduction in solar and/or battery storage compared to the proposed project. The site layout would be almost identical to the proposed project, except the BESS and substation would be located approximately 400 feet south of where it is currently proposed, which would be within Farmland of Local Importance and would avoid long-term impacts on Farmland of Statewide Importance. All other project components would be in the same layout as the proposed project. Overall agricultural impacts under this alternative would be less than those of the proposed project and no mitigation would be required for Alternative 2 in relation to converting 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 non-agricultural use.

Because Alternative 2 would construct all project components except for the substation and BESS in the same layout as the proposed project and would have the same generating capacity as the proposed project, all construction activities and resulting impacts associated with air quality, biological resources, cultural resources, geology, soils, and paleontological resources, GHG emissions, noise, and transportation impacts would be similar to the project. This alternative would meet the project objectives and would comply with California's renewable energy and greenhouse gas emission reduction laws and goals and SMUD Board of Directors' 2030 Zero Carbon Plan.

For these reasons, Alternative 1 is the environmentally superior alternative because overall impacts are slightly less than those of the proposed project (with the exception of agricultural impacts). All potentially significant impacts would be mitigated to less-than-significant and all project objectives would be met while also significantly reducing overall regional GHG emissions. As described in Section 6.2.3, "Alternatives Considered but Not Evaluated" under "Onsite Alternatives," the project design has evolved since its initial conception as SMUD has sought to identify the least environmentally damaging option for development of the needed solar energy capacity. To that end, SMUD has established setbacks from vernal pools and seasonal wetlands and other waters within the project site to avoid or minimize impacts on wetlands and other sensitive natural communities based on field surveys conducted in 2024. Additionally, SMUD worked with the landowners to ensure development of a project that integrates agricultural irrigation production including maintaining the flood irrigation system for watering forage and sheep grazing during the operational life of the proposed project.

Therefore, while the Alternative 1 is the environmentally superior alternative, because of a very slightly lower impact footprint. However, the proposed project is only slightly more impactful.

Based on these considerations, the proposed project remains SMUD's preferred alternative.

7.0 LIST OF PREPARERS

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None.

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None.

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