

Draft Environmental Impact Report

SCH# 2021090602

Volume 1
Chapters 1 through 11

AZALEA SOLAR PROJECT
by SF Azalea, LLC (PP21401)

Conditional Use Permit No. 10, Map No. 3
Conditional Use Permit No. 14, Map No. 3
Williamson Act Land Use Contract Cancellation 20-06



Kern County
Planning and Natural Resources Department
Bakersfield, California

September 2022

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Lorelei H. Oviatt, AICP, Director
2700 "M" Street, Suite 100
Bakersfield, CA 93301-2323
Phone: (661) 862-8600
Fax: (661) 862-8601 TTY Relay 1-800-735-2929
Email: planning@kerncounty.com
Web Address: <http://kernplanning.com/>



**PLANNING AND NATURAL
RESOURCES DEPARTMENT**

**Planning
Community Development
Administrative Operations**

DATE: September 2, 2022

TO: See Attached Mailing List

FROM: Kern County Planning and Natural
Resources Department
Attn: Terrance Smalls
2700 "M" Street, Suite 100
Bakersfield, CA 93301
(661)862-8607; SmallsT@kerncounty.com

**SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE AZALEA SOLAR
PROJECT BY SF AZALEA, LLC (SCH #2021090602)**

Dear Interested Party:

The Kern County Planning and Natural Resources Department as Lead Agency has prepared a Draft Environmental Impact Report (DEIR) for the above-noted project to allow for the construction and operation of a photovoltaic solar facility and associated infrastructure necessary to generate up to 60 megawatts-alternating current (MW-AC) of renewable energy, including an up to 55 MW battery energy storage system (BESS), on approximately 640 acres of privately-owned land.

The proposed Azalea Solar Project site is located approximately 2.5 miles northwest of Twisselman Road and Kings Road, approximately 14 miles northwest of the community of Lost Hills, approximately 6 miles west of Interstate 5, and approximately 4 miles east of State Route 33, in the northwestern portion of the Kern County Valley Region. The site is located within Section 11 Township 25 South, Range 19 East in the Mount Diablo Base and Meridian.

Implementation of the project as proposed includes the following requests:

- Issuance of Conditional Use Permit (CUP No. 10, Map No. 3) to allow for the construction and operation of an approximate 60 MW solar facility, as well as ancillary structures including a 55 MW BESS, on the 640-acre site within the A (Exclusive Agriculture) zone district pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.
- Issuance of Conditional Use Permit (CUP No. 14, Map No. 3) to allow for the construction and operation of a microwave communications tower within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.F of the Kern County Zoning Ordinance.
- Cancellation of a Williamson Act Contract to be processed for APN 043-210-17 within the proposed CUP boundary.

Enclosed is a copy of the Draft EIR prepared for the proposed project. If we have not received a reply from you by **October 17, 2022, at 5:00 P.M.**, we will assume that you have no comments regarding this Draft EIR.

Should you have any questions regarding this project, please do not hesitate to contact me at smallst@kerncounty.com or (661) 862-8607.

Sincerely,

A handwritten signature in blue ink that reads "Terrance Smalls".

Terrance Smalls, Supervising Planner
Advanced Planning Division

Azalea Solar
I:\Planning\WORKGRPS\WP\LABEL
S\Azalea Solar.docx
an 9/7/2021

City of Arvin
P.O. Box 548
Arvin, CA 93203

Bakersfield City Planning Dept
1715 Chester Avenue
Bakersfield, CA 93301

Bakersfield City Public Works Dept
1501 Truxtun Avenue
Bakersfield, CA 93301

California City Planning Dept
21000 Hacienda Blvd.
California City, CA 93515

Delano City Planning Dept
P.O. Box 3010
Delano, CA 93216

City of Maricopa
P.O. Box 548
Maricopa, CA 93252

City of McFarland
401 West Kern Avenue
McFarland, CA 93250

City of Ridgecrest
100 West California Avenue
Ridgecrest, CA 93555

City of Shafter
336 Pacific Avenue
Shafter, CA 93263

City of Taft
Planning & Building
209 East Kern Street
Taft, CA 93268

City of Tehachapi
Attn: John Schlosser
115 South Robinson Street
Tehachapi, CA 93561-1722

City of Wasco
764 E Street
Wasco, CA 93280

Inyo County Planning Dept
P.O. Drawer "L"
Independence, CA 93526

Kings County Planning Agency
1400 West Lacey Blvd, Bldg 6
Hanford, CA 93230

Los Angeles Co Reg Planning Dept
320 West Temple Street
Los Angeles, CA 90012

San Bernardino Co Planning Dept
385 North Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0182

San Luis Obispo Co Planning Dept
Planning and Building
976 Osos Street
San Luis Obispo, CA 93408

Santa Barbara Co Resource Mgt Dept
123 East Anapamu Street
Santa Barbara, CA 93101

Tulare County Planning & Dev Dept
5961 South Mooney Boulevard
Visalia, CA 93291

Ventura County RMA Planning Div
800 South Victoria Avenue, L1740
Ventura, CA 93009-1740

U.S. Bureau of Land Management
Caliente/Bakersfield
3801 Pegasus Drive
Bakersfield, CA 93308-6837

U. S. Fish & Wildlife Service
Division of Ecological Services
2800 Cottage Way #W-2605
Sacramento, CA 95825-1846

U.S. Dept of Agriculture/NRCS
5080 California Avenue, Ste 150
Bakersfield, CA 93309-0711

So. San Joaquin Valley Arch Info Ctr
California State University of Bkfd
9001 Stockdale Highway
Bakersfield, CA 93311

Caltrans/Dist 6
Planning/Land Bank Bldg.
P.O. Box 12616
Fresno, CA 93778

State Dept of Conservation
Geologic Energy Management Division
4800 Stockdale Highway, Ste 108
Bakersfield, CA 93309

State Dept of Conservation
Geologic Energy Management Division
801 "K" Street, MS 20-20
Sacramento, CA 95814-3530

California Fish & Wildlife
1234 East Shaw Avenue
Fresno, CA 93710

State Dept of Parks & Recreation
Tehachapi District
Angeles District - Mojave Desert Sector
15701 E. Avenue M
Lancaster, CA 93535

Public Utilities Comm Energy Div
505 Van Ness Avenue
San Francisco, CA 94102

Kern County
Agriculture Department

County Clerk

Kern County Administrative Officer

Kern County Public Works Department/
Building & Development/Floodplain

Kern County Public Works Department/
Building & Development/Survey

Kern County
Env Health Services Department

Kern County Fire Dept
David Witt, Fire Chief

Kern County Fire Dept
Cary Wright, Fire Marshall

Kern County Library/Beale
Local History Room

Kern County Library/Beale
Andie Sullivan

Kern County Museum
3801 Chester Avenue
Bakersfield, CA 93301

Kern County Parks & Recreation

Kern County Sheriff's Dept
Administration

Kern County Public Works Department/
Building & Development/Development
Review

Kern County Public Works
Department/Operations &
Maintenance/Regulatory Monitoring &
Reporting

Kern County Public Works Department/
Building & Development/Code
Compliance

Wasco Union High School Dist
P.O. Box 250
Wasco, CA 93280

Wasco Union Elementary School Dist
639 Broadway
Wasco, CA 93280

Kern High School Dist
5801 Sundale Avenue
Bakersfield, CA 93309

Kern County Superintendent of Schools
Attention School District Facility Services
1300 - 17th Street
Bakersfield, CA 93301

KernCOG
1401 19th Street - Suite 300
Bakersfield, CA 93301

Lost Hills Water Dist
3008 Sillect Avenue, Ste 205
Bakersfield, CA 93308-6340

Rosedale-Rio Bravo Water Dist
P.O. Box 20820
Bakersfield, CA 93390-0820

Kern County Water Agency
P.O. Box 58
Bakersfield, CA 93302-0058

San Joaquin Valley
Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

West Side Mosquito
Abatement Dist.
P.O. Box 205
Taft, CA 93268

Adams, Broadwell, Joseph & Cardozo
Attention: Janet M. Laurain
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Kern Audubon Society
Attn: Frank Bedard, Chairman
4124 Chardonnay Drive
Bakersfield, CA 93306

Los Angeles Audubon
926 Citrus Avenue
Los Angeles, CA 90036-4929

Center on Race, Poverty
& the Environment
Attn: Marissa Alexander
1999 Harrison Street – Suite 650
San Francisco, CA 94612

Center on Race, Poverty
& the Environmental/
CA Rural Legal Assistance Foundation
1012 Jefferson Street
Delano, CA 93215

Defenders of Wildlife/
Kim Delfino, California Dir
980 - 9th Street, Suite 1730
Sacramento, CA 95814

Pacific Gas & Electric Co
Land Projects
650 "O" Street, First Floor
Fresno, CA 93760-0001

Sierra Club/Kern Kaweah Chapter
P.O. Box 3357
Bakersfield, CA 93385

Southern California Gas Co
35118 McMurtrey Avenue
Bakersfield, CA 93308-9477

Southern California Gas Co
Transportation Dept
9400 Oakdale Avenue
Chatsworth, CA 91313-6511

Chumash Council of Bakersfield
2421 "O" Street
Bakersfield, CA 93301-2441

David Laughing Horse Robinson
P.O. Box 20849
Bakersfield, CA 93390

Kern Valley Indian Council
Attn: Robert Robinson, Chairperson
P.O. Box 401
Weldon, CA 93283

Kern Valley Indian Council
Historic Preservation Office
P.O. Box 401
Weldon, CA 93283

Santa Rosa Rancheria
Ruben Barrios, Chairperson
P.O. Box 8
Lemoore, CA 93245

Tejon Indian Tribe
Kathy Morgan, Chairperson
1731 Hasti-acres Drive, Suite 108
Bakersfield, CA 93309

Kitanemuk & Yowlumne Tejon Indians
Chairperson
115 Radio Street
Bakersfield, CA 93305

Tubatulabals of Kern County
Attn: Robert Gomez, Chairperson
P.O. Box 226
Lake Isabella, CA 93240

Tule River Indian Tribe
Neal Peyron, Chairperson
P.O. Box 589
Porterville, CA 93258

San Fernando Band of Mission Indians
Attn: John Valenzuela, Chairperson
P.O. Box 221838
Newhall, CA 91322

Matthew Gorman
The Gorman Law Firm
1346 E. Walnut Street, Suite 220
Pasadena, CA 91106

Leadership Counsel for Justice &
Accountability
1527 - 19th Street, Suite 212
Bakersfield, CA 93301

LIUNA
Attn: Danny Zaragoza
2201 "H" Street
Bakersfield, CA 93301

Vestas
1417 NW Everett Street
Portland, OR 97209

Terra-Gen Power, LLC
Randy Hoyle
11512 El Camino Real, Suite 370
San Diego, CA 92130-3025^

Renewal Resources Group
Holding Company
Rupal Patel
113 South La Brea Avenue, 3rd Floor
Los Angeles, CA 90036^

David Walsh
22941 Banducci Road
Tehachapi, CA 93561^

Congentrix Sunshine, LLC
Rick Neff
9405 Arrowpoint Blvd
Charlotte, NC 28273^

Fotowatio Renewable Ventures
Sean Kiernan
44 Montgomery Street, Suite 2200
San Francisco, CA 94104^

EDP Renewables Company
North America, LLC
53 SW Yamhill Street
Portland, OR 97204^

Structure Cast
Larry Turpin, Precast Sales Manager
8261 McCutchen Road
Bakersfield, CA 93311^

Wind Stream, LLC
Albert Davies
1275 - 4th Street, No. 107
Santa Rosa, CA 95404^

Darren Kelly
Sr. Business Manager
Terra-Gen Power, LLC
1095 Ave of the Americas – FL 25, Ste A
New York, NY 10036-6797^

Bill Barnes
Dir of Asset Mgmt
AES Midwest Wind Gen
P.O. Box 2190
Palm Springs, CA 92263-2190^

Sarah K. Friedman
Beyond Coal Campaign/Sierra Club
1417 Calumet Avenue
Los Angeles, CA 90026^

Robert Burgett
9261 - 60th Street, West
Mojave, CA 93501^

Lozeau Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612^

PG&E
Steven Ng, Manager
Renewal Dev, T&D Intercon
77 Beal Street, Room 5361
San Francisco, CA 94105^

Wayne Mayes
Iberdrola Renewables
Dir Tech Serv
1125 NW Couch St, Ste 700, 7th Fl
Portland, OR 97209^

Michael Strickler
Iberdrola Renewables, Sr Proj Mgr
1125 NW Couch St, Ste 700, 7th Fl
Portland, OR 97209^

Recurrent Energy
Seth Israel
300 California Street, 8th Floor
San Francisco, CA 94101-1407^

Kate Kelly
Kelly Group
P.O. Box 868
Winters, CA 95694^

Carol Lawhon
Association Executive, IOM
Tehachapi Area Assoc of Realtors
803 Tucker Road
Tehachapi, CA 93561^

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**NOTICE OF AVAILABILITY FOR PUBLIC REVIEW AND HEARING ON
THE DRAFT ENVIRONMENTAL IMPACT REPORT
FOR THE PROPOSED AZALEA SOLAR PROJECT**

This is to advise that the Kern County Planning and Natural Resources Department has prepared an Environmental Impact Report (EIR) for the project identified below. As mandated by State law, the minimum public review period for this document is 45 days.

PROJECT TITLE: Azalea Solar Project by SF Azalea, LLC (PP21401); CUP No. 10, Map No. 3; CUP No. 14, Map No. 3; and Williamson Act Land Use Cancellation # 20-06 (SCH #2021090602)

PROJECT LOCATION: The project site is located approximately 2.5 miles northwest of Twisselman Road and Kings Road, approximately 16 miles south of Kettleman City, approximately 14 miles northwest of the community of Lost Hills, approximately 6 miles west of Interstate 5, and approximately 4 miles east of State Route 33, in the northwestern portion of the Kern County Valley Region. The project site is located in Section 11 of Township 25 South, Range 19 East in the Mount Diablo Base and Meridian (MDB&M).

DOCUMENT AVAILABILITY: The document and documents referenced in the Draft EIR are available for review at the Planning and Natural Resources Department, 2700 "M" Street, Suite 100, Bakersfield, CA 93301 or on the Departmental website (<https://kernplanning.com/planning/environmental-documents/>).

PUBLIC HEARING AND COMMENT: Kern County is soliciting comments on the adequacy and completeness of the analysis and proposed mitigation measures described in the Draft EIR. You may comment by providing testimony at the public hearing on:

DATE: December 08, 2022
TIME: 7:00 P.M. or soon thereafter
LOCATION: Chambers of the Board of Supervisors
Kern County Administrative Center, First Floor
1115 Truxtun Avenue, Bakersfield, CA 93301

And/or submitting written comments to the project planner identified below prior to the close of the public comment period on October 17, 2022, at 5:00 p.m. Testimony at future public hearings may be limited to those issues raised during the public review period either orally or submitted in writing.

HOW TO COMMENT: You may provide testimony at the public hearing on the date and time specified above or provide written comments prior to the close of public comment period on October 17, 2022, at 5:00 p.m. to:

**Kern County Planning and Natural Resources Department
ATTN: Terrance Smalls, Supervising Planner
2700 "M" Street, Suite 100, Bakersfield, CA 93301
Phone: (661) 862-8607
E-mail: smallst@kerncounty.com**

PROJECT DESCRIPTION: The Azalea Solar Project, as proposed by SF Azalea, LLC, would develop a photovoltaic solar facility and associated infrastructure necessary to generate up to 60 megawatt-alternating

current (MW-AC) of renewable energy, with 55 MW of energy storage, on approximately 640 acres of privately-owned land. The project site consists of 1 site located on 2 parcels. The project would be supported by a 230-kilovolt (kV) gen-tie overhead and/or underground electrical transmission line(s) originating from one or more on-site substations and terminating at either the PG&E Arco Substation. The project's permanent facilities would include, but are not limited to, service roads, a power collection system, inverter stations, transformer systems, transmission lines, electrical switchyards, project substations, energy (battery) storage system, and operations and maintenance facilities.

Implementation of the project as proposed includes the following requests:

- a) Issuance of Conditional Use Permit No. 10, Map No. 3 to allow for the construction and operation of an approximate 60 MW solar facility, as well as ancillary structures including a 55 MW Battery Energy Storage System (BESS), on the 640-acre site within the A (Exclusive Agriculture) zone district pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.
- b) Issuance of Conditional Use Permit No. 14, Map No. 3 to allow for the construction and operation of a microwave communications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.F, of the Kern County Zoning Ordinance.
- c) Cancellation of an Existing Williamson Act Land Use Contract

ENVIRONMENTAL REVIEW FINDINGS: Aesthetics (Cumulative); Agriculture and Forest Resources (Project); Air Quality (Cumulative); Biological Resources (Cumulative); and Wildfire (Cumulative)

LORELEI H. OVIATT, AICP, Director
Planning and Natural Resources Department

To be published once only on next available date and as soon as possible

THE BAKERSFIELD CALIFORNIAN

TJS (08/15/22)

cc: County Clerk (2) (with fee)
Environmental Status Board
LiUNA
Supervisory District No. 4

Azalea Solar Project - EIR
(CUP #10, Map #3;)
WO #PP21401

043 550 12 00 8
WEST VENTURES LLC
2770 MAIN ST STE 270
FRISCO TX 75033

043 210 17 00 4
WILLIAM & DORIS LAND &
ENERGY CO LLC
35244 OIL CITY RD
COALINGA CA 93210-9221

043 210 06 00 2
WILLIAM J MOUREN FARMING INC
35244 OIL CITY RD
COALINGA CA 93210

043 210 21 10 2
TIPTON WILLIAM W JR ET AL
777 SUNSET RIDGE RD
NORTHFIELD IL 60093

043 220 13 00 5
TURNER SARA E & REID J
1960 PARKSIDE DR
WALNUT CREEK CA 94596-3550

043 210 63 00 7
AERA ENERGY LLC
P O BOX 11164
BAKERSFIELD CA 93389-1164

043 250 02 00 2
AMIN ORCHARD CO
195 FAIRFIELD AV STE 1D
WEST CALDWELL NJ 07006

043 220 01 00 0
ANDERSON JAMES S
35244 OIL CITY RD
COALINGA CA 93210

043 210 21 01 4
BACA MARY LOUISE
8550 W CHARLESTON BLV #102 STE
340
LAS VEGAS NV 89117

043 210 08 02 6
BOGGESS GENEVIEVE F
43909 SASSARI ST
TEMECULA CA 92592-9386

043 220 14 00 8
CASTRO FAMILY TRUST
3431 DELTA AV
LONG BEACH CA 90810

043 210 04 00 6
CHEVRON USA INC
P O BOX 1392
BAKERSFIELD CA 93302-1392

043 210 08 04 4
CLARK CLIFFORD A
2821 MIRANDA AV
ALAMO CA 94507-1427

043 210 69 00 5
DBF ACQUISITION CO LLC
11444 W OLYMPIC BL FLR 10TH
LOS ANGELES CA 90064

043 220 04 00 9
DUTTON MARGIT H
11617 KLING ST
N HOLLYWOOD CA 91602

043 220 08 02 9
EICHHOLTZ JOHN P & LINDA G LIV
TR
9261 MASSOT AV
SANTEE CA 92071

043 210 08 03 5
FRAME DONALD P
3014 W KEOGH CT
VISALIA CA 93291-4229

043 210 21 04 1
GATES GILBERT HENRY TRUST
145 EL PINAR
LOS GATOS CA 95032

043 210 21 03 2
GREEN LIVING TRUST
4209 SILL PL
BAKERSFIELD CA 93306

043 210 21 05 0
HAMILTON FAMILY TRUST
8550 W CHARLESTON BLV #102
STE 340
LAS VEGAS NV 89117

043 550 05 00 8
HARVEST PETROLEUM INC
2770 N MAIN ST STE 270
FRISCO TX 75033

043 220 08 01 0
HILLEGEIST FAMILY HOLDING
TRUST
PO BOX 1047
SELAH WA 98942-4047

043 220 06 01 4
HITCHCOCK GEORGEANN K ET
AL
4338 FAIR OAKS BL
SACRAMENTO CA 95864

043 210 21 06 9
JOSEPH FAMILY TRUST
8550 W CHARLESTON BLV #102 STE
340
LAS VEGAS NV 89117

043 210 21 02 3
KHRISTY BARBARA TRUST
PO BOX 1784
MEDFORD OR 97501-0140

043 210 42 00 6
LONGBOW LLC
1701 WESTWIND DR # 126
BAKERSFIELD CA 93301-3048

043 210 21 07 8
PIVOVAROFF HARRY A & VERA
8550 W CHARLESTON BLV #102 STE
340
LAS VEGAS NV 89117

043 220 02 00 3
RAIN LLC
35244 OIL CITY RD
COALINGA CA 93210

043 210 48 00 4
ROCK CREEK OIL LLC
10350 SANTA MONICA BL # 160
LOS ANGELES CA 90025-5055

043 220 05 00 2
SINGH LAKHBIR & KAUR
SUKHINDER
6336 LAFAYETTE AV
NEWARK CA 94560-2435

043 210 21 08 7
SPIEGLMAN EVELYN
8550 W CHARLESTON BLV #102 STE
340
LAS VEGAS NV 89117

043 220 03 00 6
TAYLOR DONALDSON &
NORMA J TR
12 DEVONSHIRE DR
NOVATO CA 94947-2032

043 210 21 09 6
TIPTON BENJAMIN PARKER ET AL
1346 JAMES AV
REDWOOD CITY CA 94062-2238

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: _____

Lead Agency: _____ Contact Person: _____

Mailing Address: _____ Phone: _____

City: _____ Zip: _____ County: _____

Project Location: County: _____ City/Nearest Community: _____

Cross Streets: _____ Zip Code: _____

Longitude/Latitude (degrees, minutes and seconds): _____° _____' _____" N / _____° _____' _____" W Total Acres: _____

Assessor's Parcel No.: _____ Section: _____ Twp.: _____ Range: _____ Base: _____

Within 2 Miles: State Hwy #: _____ Waterways: _____

Airports: _____ Railways: _____ Schools: _____

Document Type:

CEQA: <input type="checkbox"/> NOP	<input type="checkbox"/> Draft EIR	NEPA: <input type="checkbox"/> NOI	Other: <input type="checkbox"/> Joint Document
<input type="checkbox"/> Early Cons	<input type="checkbox"/> Supplement/Subsequent EIR	<input type="checkbox"/> EA	<input type="checkbox"/> Final Document
<input type="checkbox"/> Neg Dec	(Prior SCH No.) _____	<input type="checkbox"/> Draft EIS	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Mit Neg Dec	Other: _____	<input type="checkbox"/> FONSI	_____

Local Action Type:

<input type="checkbox"/> General Plan Update	<input type="checkbox"/> Specific Plan	<input type="checkbox"/> Rezone	<input type="checkbox"/> Annexation
<input type="checkbox"/> General Plan Amendment	<input type="checkbox"/> Master Plan	<input type="checkbox"/> Prezone	<input type="checkbox"/> Redevelopment
<input type="checkbox"/> General Plan Element	<input type="checkbox"/> Planned Unit Development	<input type="checkbox"/> Use Permit	<input type="checkbox"/> Coastal Permit
<input type="checkbox"/> Community Plan	<input type="checkbox"/> Site Plan	<input type="checkbox"/> Land Division (Subdivision, etc.)	<input type="checkbox"/> Other: _____

Development Type:

<input type="checkbox"/> Residential: Units _____ Acres _____	<input type="checkbox"/> Transportation: Type _____
<input type="checkbox"/> Office: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Mining: Mineral _____
<input type="checkbox"/> Commercial: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Power: Type _____ MW _____
<input type="checkbox"/> Industrial: Sq.ft. _____ Acres _____ Employees _____	<input type="checkbox"/> Waste Treatment: Type _____ MGD _____
<input type="checkbox"/> Educational: _____	<input type="checkbox"/> Hazardous Waste: Type _____
<input type="checkbox"/> Recreational: _____	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Water Facilities: Type _____ MGD _____	

Project Issues Discussed in Document:

<input type="checkbox"/> Aesthetic/Visual	<input type="checkbox"/> Fiscal	<input type="checkbox"/> Recreation/Parks	<input type="checkbox"/> Vegetation
<input type="checkbox"/> Agricultural Land	<input type="checkbox"/> Flood Plain/Flooding	<input type="checkbox"/> Schools/Universities	<input type="checkbox"/> Water Quality
<input type="checkbox"/> Air Quality	<input type="checkbox"/> Forest Land/Fire Hazard	<input type="checkbox"/> Septic Systems	<input type="checkbox"/> Water Supply/Groundwater
<input type="checkbox"/> Archeological/Historical	<input type="checkbox"/> Geologic/Seismic	<input type="checkbox"/> Sewer Capacity	<input type="checkbox"/> Wetland/Riparian
<input type="checkbox"/> Biological Resources	<input type="checkbox"/> Minerals	<input type="checkbox"/> Soil Erosion/Compaction/Grading	<input type="checkbox"/> Growth Inducement
<input type="checkbox"/> Coastal Zone	<input type="checkbox"/> Noise	<input type="checkbox"/> Solid Waste	<input type="checkbox"/> Land Use
<input type="checkbox"/> Drainage/Absorption	<input type="checkbox"/> Population/Housing Balance	<input type="checkbox"/> Toxic/Hazardous	<input type="checkbox"/> Cumulative Effects
<input type="checkbox"/> Economic/Jobs	<input type="checkbox"/> Public Services/Facilities	<input type="checkbox"/> Traffic/Circulation	<input type="checkbox"/> Other: _____

Present Land Use/Zoning/General Plan Designation:

Project Description: (please use a separate page if necessary)

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X".
If you have already sent your document to the agency please denote that with an "S".

<input type="checkbox"/> Air Resources Board	<input type="checkbox"/> Office of Historic Preservation
<input type="checkbox"/> Boating & Waterways, Department of	<input type="checkbox"/> Office of Public School Construction
<input type="checkbox"/> California Emergency Management Agency	<input type="checkbox"/> Parks & Recreation, Department of
<input type="checkbox"/> California Highway Patrol	<input type="checkbox"/> Pesticide Regulation, Department of
<input type="checkbox"/> Caltrans District # _____	<input type="checkbox"/> Public Utilities Commission
<input type="checkbox"/> Caltrans Division of Aeronautics	<input type="checkbox"/> Regional WQCB # _____
<input type="checkbox"/> Caltrans Planning	<input type="checkbox"/> Resources Agency
<input type="checkbox"/> Central Valley Flood Protection Board	<input type="checkbox"/> Resources Recycling and Recovery, Department of
<input type="checkbox"/> Coachella Valley Mtns. Conservancy	<input type="checkbox"/> S.F. Bay Conservation & Development Comm.
<input type="checkbox"/> Coastal Commission	<input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
<input type="checkbox"/> Colorado River Board	<input type="checkbox"/> San Joaquin River Conservancy
<input type="checkbox"/> Conservation, Department of	<input type="checkbox"/> Santa Monica Mtns. Conservancy
<input type="checkbox"/> Corrections, Department of	<input type="checkbox"/> State Lands Commission
<input type="checkbox"/> Delta Protection Commission	<input type="checkbox"/> SWRCB: Clean Water Grants
<input type="checkbox"/> Education, Department of	<input type="checkbox"/> SWRCB: Water Quality
<input type="checkbox"/> Energy Commission	<input type="checkbox"/> SWRCB: Water Rights
<input type="checkbox"/> Fish & Game Region # _____	<input type="checkbox"/> Tahoe Regional Planning Agency
<input type="checkbox"/> Food & Agriculture, Department of	<input type="checkbox"/> Toxic Substances Control, Department of
<input type="checkbox"/> Forestry and Fire Protection, Department of	<input type="checkbox"/> Water Resources, Department of
<input type="checkbox"/> General Services, Department of	
<input type="checkbox"/> Health Services, Department of	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Housing & Community Development	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Native American Heritage Commission	

Local Public Review Period (to be filled in by lead agency)

Starting Date _____ Ending Date _____

Lead Agency (Complete if applicable):

Consulting Firm: _____	Applicant: _____
Address: _____	Address: _____
City/State/Zip: _____	City/State/Zip: _____
Contact: _____	Phone: _____
Phone: _____	

Signature of Lead Agency Representative: _____ /s/ _____ Date: _____

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Draft Environmental Impact Report

SCH# 2021090602

Volume 1
Chapters 1 through 11

AZALEA SOLAR PROJECT
by SF Azalea, LLC (PP21401)

Conditional Use Permit No. 10, Map No. 3
Conditional Use Permit No. 14, Map No. 3
Williamson Act Land Use Contract Cancellation 20-06



Kern County
Planning and Natural Resources Department
Bakersfield, California

Technical Assistance by:
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September 2022

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Chapter 1

Executive Summary

1.1 Introduction

This Environmental Impact Report (EIR) has been prepared by Kern County (County), which is the CEQA Lead Agency, to identify and evaluate potential environmental impacts associated with implementation of the approximately 340-acre Azalea Solar Project (project) on approximately 640-acre site by SF Azalea LLC (project proponent). The project proposes to construct and operate a photovoltaic (PV) solar facility and associated infrastructure to generate up to 60 megawatts (MW) of renewable electrical energy and a Battery Energy Storage System (BESS) capable of storing approximately 55 MW of energy within approximately 5 acres of the overall 640 acres of privately-owned land. The project's permanent facilities would include, but are not limited to, service roads, a power collection system, inverter stations, transformer systems, transmission lines, electrical switchyards, project substations, energy (battery) storage system, and operations and maintenance facilities.

Implementation of the project as proposed includes the following requests:

- Conditional Use Permit (CUP 10, Map No. 3) to allow for the construction and operation of an approximate 60 MW solar facility, as well as ancillary structures including a 55 MW BESS, on the 640-acre site within the A (Exclusive Agriculture) zone district pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.
- Conditional Use Permit (CUP 14, Map No. 3) to allow for the construction and operation of a microwave communications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.F of the Kern County Zoning Ordinance.
- Cancellation of a Williamson Act Contract to be processed for APN 043-210-17 within the proposed CUP boundary.

The project proponent/operator is also requesting California Environmental Quality Act (CEQA) review for the project. **Table 1-1: Project Assessor Parcel Numbers (APNs) – Specific Plan Map Code Designations and Zone Districts – Azalea Solar Project**, identifies the Assessor Parcel Numbers (APN) for the project site.

TABLE 1-1: PROJECT ASSESSOR PARCEL NUMBERS (APNs) – GENERAL PLAN MAP CODE DESIGNATIONS AND ZONE DISTRICTS – AZALEA SOLAR PROJECT

APN	Existing Map Code Designation	Existing Zoning	Proposed Zoning	APN Acres
043-210-17	8.3; 8.3/2.5	A	A	480.00
043-210-18	8.3;8.3/2.5	A	A	160.00
Project Totals				640.00
043-210-27*	8.3	A	A	20.26
<u>General Plan Map Code:</u> 8.3 = Extensive Agriculture (Min. 20 Acre Parcel Size); 2.5 = Flood Hazard Overlay <u>Zone Designation:</u> A = Exclusive Agriculture * This Parcel contains Arco Substation and is not included in the 640 acre total project site				

This Draft Environmental Impact Report (EIR) has been prepared by Kern County as the Lead Agency under CEQA. The Draft EIR provides information about the environmental setting and impacts of the project and alternatives. It informs the public about the project and its impacts and provides information to meet the needs of local, State, and federal permitting agencies that are required to consider the project. The EIR will be used by Kern County to determine whether to approve the requested CUPs (CUP 10, Map 3 and CUP 14) and associated land use changes.

This Executive Summary summarizes the requirements of the *CEQA Guidelines*; provides an overview of the project and alternatives; identifies the purpose of this EIR; outlines the potential impacts of the project and the recommended mitigation measures; and discloses areas of controversy and issues to be resolved.

1.2 Project Summary

The project would develop a solar PV generating facility on approximately 340 acres of a 640-acre site. As shown in Chapter 3, *Project Description*, **Figure 3-1: Regional Vicinity Map**, and **Figure 3-2: Local Vicinity Map**, of this EIR, the project is located in an unincorporated portion of northwestern Kern County. The project would generate a combined total of 60 MW of renewable electrical energy with the capacity to store approximately 55 MW of energy on approximately 5 acres of the site. The project's permanent facilities would include, but are not limited to, service roads, a power collection system, inverter stations, transformer systems, transmission lines, electrical switchyards, project substations, energy (battery) storage system, and operations and maintenance facilities, as shown on **Figure 3-8: Proposed Site Plan**.

1.2.1 Discretionary Entitlements Required

To implement this project, depending upon site surveys and jurisdictional determinations, the following discretionary and ministerial permits/approvals may be required if applicable to the project, including but not limited to the following:

County of Kern

- Certification of Final Environmental Impact Report
- Adoption of 15091 Findings of Fact, and 15093, Statement of Overriding Considerations
- Approval of proposed Mitigation Monitoring and Reporting Program
- Approval of Kern County Conditional Use Permits (CUP 10, Map 3 and CUP 14, Map 3)
- Approval of the proposed Williamson Act Land Use Contract Cancellations
- Approval of non-summary public access easement vacations
- Approval of applicable Franchise Agreement(s)
- Approval of Grading Permits
- Approval of Building Permits
- Approval of Kern County Encroachment Permits
- Fire Safety Plan

Other Responsible Agency Entitlements

Federal

- U.S. Fish and Wildlife Service (USFWS), Habitat Conservation Plan (HCP), if required
- United States Army Corps of Engineers Jurisdictional Determination/Section 404 Permit, if required

State

- California Public Utilities Commission
- California Department of Fish and Wildlife (CDFW)
 - Section 1600 et seq. (Lake and Streambed Alteration Agreement), if required
 - Section 2081 Permit (Incidental Take Permit), if required
- Central Valley Regional Water Quality Control Board (RWQCB)
 - Waste Discharge Requirements, if required
 - Regional Water Quality Certification CWA Section 401 Permit (if 404 Permit is required)
 - National Pollution Discharge Elimination System (NPDES) Construction General Permit if impacts to federal jurisdictional waters will occur
- California Department of Transportation (Caltrans)
 - Right-of-Way Encroachment Permit, if required
 - Oversized Loads Permit, if required

Local

- San Joaquin Valley Air Basin (SJVAB)
 - Authority to Construct
 - Fugitive Dust Control Plan
 - Permit to Operate
 - Any other permits as required

Other applicable permits or approvals from responsible agencies may be required for the project.

1.3 Relationship of the Project to Other Solar Projects

The proposed project is being developed independently of other approved or proposed solar projects in the County. If approved, the project facilities would be subject to their own use permits, conditions of approval, interconnection agreements, and power purchase agreements. Kern County understands that the project facilities would be built and operated independently of any other solar project and, if approved, would not depend on any other solar project for economic viability.

1.4 Purpose and Use of the EIR

An EIR is a public informational document used in the planning and decision-making process. This project-level EIR will analyze the environmental impacts of the project. The Kern County Planning Commission and Board of Supervisors will consider the information in this EIR, including the public comments and staff response to those comments, during the public hearing process. The final decision is made by the Kern County Board of Supervisors, who may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify:

- The significant potential impacts on the environment and indicate the manner in which those significant impacts can be avoided or mitigated;
- Any unavoidable adverse impacts that cannot be mitigated; and
- Reasonable and feasible alternatives to the project that would eliminate any significant adverse environmental impacts or reduce the impacts to a less-than-significant level.

An EIR also discloses growth-inducing impacts; impacts found not to be significant; and significant cumulative impacts of past, present, and reasonably anticipated future projects. CEQA requires preparation of an EIR that reflects the independent judgment of the lead agency regarding the impacts, the level of significance of the impacts both before and after mitigation, and mitigation measures proposed to reduce the impacts. A draft EIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The purposes of public and agency review of a draft EIR include sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting counterproposals. Reviewers of a draft EIR are requested to focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment, and ways in which the significant impacts of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate significant environmental effects.

This EIR is being distributed directly to agencies, organizations, and interested groups and persons for comment during a 45-day formal review period in accordance with *CEQA Guidelines* Section 15087. The EIR process, including means by which members of the public can comment on the EIR, is discussed further in Chapter 2, *Introduction*.

1.5 Project Overview

1.5.1 Regional Setting

The project site is located in unincorporated northwestern Kern County, in central California as shown in Chapter 3, *Project Description*, **Figure 3-1** and **Figure 3-2**, of this EIR. The project site is located in Section 11 of Township 25 South, Range 19 East in the Mount Diablo Base and Meridian. The project site is located in the Valley Region of Kern County, approximately 1.5 miles south of the Kern County/Kings County line. The site is approximately 2.5 miles northeast of Twisselman Road and Kings Road, approximately 16 miles south of Kettleman City, approximately 14 miles northwest of the community of Lost Hills, approximately 6 miles west of Interstate 5, and approximately 4 miles east of State Route 33. The topography of the project consists of two gently sloping, vacant, and undeveloped parcels of land covered with sparse to moderately dense non-native vegetation currently used for grazing. Elevations across

the project site range from roughly 462-feet above mean sea level at the southwest corner of the project area, to roughly to 584-feet above mean sea level at the northeast corner of the project area.

1.5.2 Surrounding Land Uses and Project Site Conditions

Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access roadways, a canal and a nut processing plant. Rural residential uses and other solar development are located to the south of the project site. There is one planned, solar energy and transmission project in the vicinity of the project site. This project includes the Chalan project site, located immediately east of the proposed project site.

The project site consists of two gently sloping, vacant, and undeveloped parcels of land covered with sparse to moderately dense non-native vegetation currently used for grazing. The site is in a cycle of approximately every two years to facilitate planting cover crops for cattle grazing. Habitats within the project site include agricultural field, non-native annual grassland habitat, and patches of ruderal habitat along the fenced boundaries of the project site. The project site and surrounding lands are mostly flat and exhibit little topographic variation.

Table 1-2: *Project Site and Surrounding Land Uses*, presents the existing land uses, designations, and zoning classification for the project site and surrounding area.

TABLE 1-2: PROJECT SITES AND SURROUNDING LAND USES

Location	Existing Land Use	Existing General Plan Map Code Designation	Existing Zoning Classification
Project Site	Agriculture	8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture Flood Hazard Overlay)	A (Exclusive Agriculture)
North	Agricultural, Vacant Land	8.3 (Extensive Agriculture)	A (Exclusive Agriculture)
South	Agricultural, Vacant Land	8.1/2.5 (Intensive Agriculture/Flood Hazard Overlay); 8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay)	A (Exclusive Agriculture)
East	Agricultural, Vacant Land	8.1 (Intensive agriculture (min. 20 acre parcel size))	A (Exclusive Agriculture)
West	Agricultural, Vacant Land	8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay)	A (Exclusive Agriculture)

LEGEND

General Plan Designation

2.5 = Flood Hazard Overlay

8.1 = Intensive Agriculture (Minimum 20-acre parcel size)

8.3 = Extensive Agriculture (Minimum 20-acre parcel size)

Zoning Designation

A = Exclusive Agriculture

SOURCE: Kern County, 2021

1.5.3 Project Objectives

The project has provided the following project objectives for the project:

- Assist the State of California in achieving or exceeding its Renewable Portfolio Standard (RPS), Senate Bill 350, Senate Bill 100, and the California Global Warming Solutions Act (Assembly Bill 32) and greenhouse gas emissions reduction objectives by developing and constructing new California RPS-qualified, solar power generation facilities.
- Develop a commercially viable solar power generation and battery storage facility that would support the economy by investing in the local community, creating local construction jobs, and increase tax and fee revenue to the County.
- Develop a project which would generate an estimated 500 jobs during construction and approximately 5 permanent jobs during operation to provide increased business for local contractors and vendors.
- Produce and transmit electricity at a competitive cost.
- Assist Kern County in achieving the goal in the Energy Element of its General Plan to develop large-scale solar energy development as a major energy source in the County.
- Help Southern California Community Choice Aggregators in fulfilling their local renewable energy procurement goals.

1.5.4 Project Characteristics

As described in Section 1.1, *Introduction*, the project would install a 60 MW solar photovoltaic solar facility and associated infrastructure including up to 55 MW of energy storage. Project facilities are further outlined below:

Photovoltaic (PV) modules and trackers

The proposed project would utilize photovoltaic (PV) panels or modules (including but not limited to concentrated photovoltaic technology (CPV) or bi-facial technology which have similar rectangular shapes, sizes and thickness) on mounting frameworks to convert sunlight directly into electricity. Individual panels would be installed on tracker mount systems (single- or dual-axis, using galvanized steel or aluminum). The panels would rotate to follow the sun over the course of the day. Maximum panel height is anticipated to be up to 20 feet high, depending on the mounting system selected and on County building codes.

The PV panels would be arranged in rows in a uniform grid pattern, with each row separated by 10 to 20 feet. The panels would be deployed in proximity to the power conditioning stations (PCS) where the DC produced by the panels is converted to alternating current (AC) and transferred to the on-site substation and eventual delivery to the electrical grid. The proposed layout is shown in **Figure 3-8: Proposed Site Plan**.

Each PV module would be placed on a tracker mounting structure. The foundations for the mounting structures may extend up to 10 feet below ground, depending on the structure, soil conditions, and wind loads, and may be encased in concrete or utilize small concrete footings. A light-colored ground cover or palliative may be used to increase electricity production. Final solar panel layout and spacing would be optimized for project area characteristics and the desired energy production profile. **Figure 3-8: Proposed Site Plan**, show the proposed layout of the solar panels within the project sites.

Inverter and Medium Voltage Transformers

Photovoltaic energy generated by the panels would be delivered via cable to the PCS generally located within the solar array field. The PCS are comprised of inverters, transformers, and other electrical equipment to reach the needed collection level voltage. The footprint of each PCS, which is generally mounted on a concrete pad, would be approximately 12 feet by 30 feet. The proposed project would require approximately 40 PCS's, depending on final design details, but all would be located within the project footprint. The inverter converts the DC electricity to AC electricity, which then flows to a transformer where it is stepped up to the appropriate collection level voltage (34.5-kV). The proposed project would use Power Electronic HEM Central inverters or equivalent and one medium voltage transformers per inverter. Each inverter and transformer would be installed as per manufacturer's requirements.

Electrical Collection and Distribution System

The DC output of multiple rows of PV modules connected in series would be collected through one or more combiner boxes and associated electrical wiring located throughout the Project site. The power would be delivered via an underground cable network to the inverters in the electrical equipment enclosures at the PCS, described above. Multiple transformers electrically connected in parallel would deliver AC power to the Project Substation located on-site.

Project Substation

Output from the PCS would be transferred via electrical conduits and electrical conductor wires to an on-site substation in the northwest corner of APN 043-210-17. The proposed substation would include transformers, breakers, switches, meters, and related equipment. Interconnection equipment, including the control house, would be installed aboveground and underground within the footprint of the substation. The footprint of the substation would be approximately 200 by 200 feet and the maximum height would be approximately 75 feet. The substation would also contain a control house building approximately 15 feet by 30 feet with a maximum anticipated height of 20 feet. The substation would be surrounded by a seven-foot high barbed wire chain-link fence and would comply with electrical codes. The proposed substation layout is shown in **Figure 3-9: Proposed Substation General Arrangement**.

The proposed substation would include an emergency generator for use if the regional transmission system fails; this emergency generator would provide emergency power until the regional transmission system restores operations. The substation must have access to communication systems in the area to comply with Federal Energy Regulatory Commission/California Independent System Operator/Utility monitoring and control requirements. Compliance may be accomplished by underground lines, aboveground lines, or wireless communication.

Telecommunications

The proposed project would require redundant telecommunication connections. The primary telecommunication line would consist of fiber optic cable and/or copper telecommunication line installed above and/or below ground. The line would be attached to either existing utility lines located outside of the project site or the proposed gen-tie. The proposed telecommunication route would use a combination of existing poles, new poles, and/or below ground installations between the existing telecommunications infrastructure and the Arco Substation. Below ground installations are typically installed 24 to 48 inches

below grade. Above ground lines are typically placed below existing distribution lines or on new, adjacent wooden poles. Lines would be placed within utility franchise easements to the extent feasible.

The point of interconnection to the existing telecommunication infrastructure would be located within a small telecommunications shelter. The interconnection utility service would consist of fiber stranded cables (Dielectric Self Supporting and Optical Ground Wire). A secondary internet connection would be provided using a point-to-point microwave wireless link.

Meteorological Data Collection System

The proposed project would require four meteorological data collection systems. The systems would be mounted at various locations throughout the project site. The systems would include a variety of instruments to collect meteorological data. Meteorological data would be collected at the maximum height of the solar panels approximately 20 feet above the ground.

Battery Storage Component

The proposed Facility may include the installation of a battery storage component. Storage components are advantageous for renewable energy projects because they allow energy to be reliably fed to the grid from an otherwise intermittent energy production source. The battery system would consist of commercially available lithium ion batteries housed in enclosures. The enclosures would be approximately 8 feet wide by 40 feet long by 9.5 feet high (2.4 meters wide by 12 meters long by 2.9 meters high). The battery storage component would have a footprint of approximately 2.5 acres and would be immediately adjacent to the Project's Substation. Site preparation required for the battery storage enclosures requires leveling the area for a flat concrete foundation.

The proposed lithium ion batteries would principally comply with the UL 9450 standard for outdoor energy storage enclosures. The project will be subject to compliance with existing federal, state, and local regulations for health and safety, including the 2016 California Fire Code. The Applicant would select Battery Energy Storage System (BESS) providers that comply with the application-specific codes, standards, and regulations for the siting, construction, and operation of lithium-ion stationary BESS.

The project would include current best practices for fire safety. The BESS would contain a safety system as required by NFPA 855 and tested under the UL 9540A Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems. The enclosure wall is designed to contain the fire and prevent propagation.

The Generation-Tie

The 70 kV gen-tie would interconnect the Project Substation to the existing PG&E Arco Substation. The gen-tie is proposed to extend to the west from the Project Substation for approximately 0.68 miles. The gen-tie right-of way would be from 25- to 75-feet-wide. Approximately 30 new poles would be installed to accommodate the gen-tie. The new poles would be constructed of either steel or wood at a maximum of 90 feet tall.

PG&E Arco Substation Additions

Improvements to the existing PG&E Arco Substation (APN:043-210-27) would include the modification of the substation area by approximately 9,000 square feet due to the relocation of the existing fence line

further to the north by approximately 80 feet, and further to the west by approximately 120 feet. The area proposed for modification of the substation is located on a slope, therefore, moderate site grading and fill will be required to accommodate the substation facilities and temporary construction work area. PG&E will install new electric equipment at the substation, including new circuit breakers, bus structures, 70 kV disconnect switches, transformers, protective relaying, metering and control equipment, telemetering equipment, an electric grounding system, and underground conduits or trench systems. The modified substation area will be unmanned, with automated features and remote-control capabilities. For security, PG&E will install an approximately 9.5-foot-tall fence consisting of an 8-foot-tall chain-link fence fabric, topped with 1-foot “V” shaped topper with 6 rows of bar-wire and 1.5-foot diameter razor wire that will enclose the modified portion of the substation area.

PG&E Power Line Reconfiguration

Existing power poles and conductors located outside Arco Substation will require reconfiguration in order for the Azalea Solar Project to connect to the new substation equipment. This will be achieved by installing new structures, or by replacing existing structures with new structures, to accommodate the Azalea Solar Project generation tie-line and new line angles resulting from the new arrangements, taking into consideration land availability and site access to the power line support locations. Rearranging the existing power lines will require installing one new Tubular Steel Pole (TSP) and removing approximately one wood pole on the Arco-Tulare Lake 70 kV Power Line located on the west side of the substation fence line. The new pole will be approximately 80-95 foot-tall.

In order to accommodate the Azalea Solar Project generation tie-line interconnection, PG&E will extend an approximately 195-foot long 70 kV power line from the Arco Substation dead-end structure to a new Tubular Steel Pole located immediately west of the substation fence line. One additional approximately 80-95 foot tall Tubular Steel Pole will be added to support the line between the Azalea Solar Project and PG&E's Arco Substation.

PG&E Access and Construction Work Areas

Parking, lay down, and staging for construction materials and equipment at the Arco Substation site will temporarily occupy the northern portion of the graded pad. Work areas around the poles will require approximately a 50-foot radius. The modified substation area will result in approximately .50-acres of permanent disturbance. Temporary work areas outside the modified substation will total approximately 2-acres of temporary disturbance.

Lighting

The proposed in-site lighting would allow for maintenance and security activities during project operation. Low-level lighting would be installed at the entry gates, substation, PCS, and O&M building. Proposed lighting outside of the substation would be downward facing, shielded, or otherwise modified to prevent emission of light or glare beyond the property line or upward into the sky as required by Kern County Ordinance (Chapter 19.81) - Outdoor Lighting-Dark Skies requirements.

Signage

Signage would be installed on the fence in the vicinity of the main entry gates on the north side of the project site. The signage would identify the project owner, operator, and emergency contacts and provide

safety and security information. Additionally, small-scale signage would be posted at the main entry gates and intermittently along the fencing around the PV panels to indicate “No Trespassing” and “Private Property” for security and safety purposes. All signage would conform to Kern County signage requirements.

Site Access roads

The project would be accessed from King Road approximately one mile north of the project site. An access road from King Road to the north boundary of the project site would be constructed as part of the proposed project. Additional access roads would be constructed between the rows of PV panels within the project site; see **Figure 3-8**. Access roads would be approximately 20 feet wide and would be accessed via multiple gates to allow access to the internal access roads. The access points and interior driveways would be constructed in accordance with Kern County and California Department of Forestry and Fire Protection (CalFire) requirements and maintained to ensure on-site circulation for emergency vehicles during all weather conditions.

The project site is currently partially enclosed by existing fencing along the east and south site boundaries. This fencing would remain and fencing surrounding other areas would be installed. The rows of PV panels would be enclosed within the project site fencing. Fencing would be a six-foot tall wire fence topped by one foot-tall three-strands of barbed wire. Fencing would be “wildlife friendly” with a five to seven-inch diagonal grid width at the lower portion to allow for the safe passage of small and medium sized mammals.

Operations and Maintenance Facilities

The project would include the construction of an O&M building with associated on-site parking (unpaved) within the project site. The O&M building may be co-located with the substation. Roads, driveways, and parking lot entrances would be constructed in accordance with Kern County improvement standards. Parking spaces and walkways would be constructed in accordance with all California Accessibility Regulations.

1.6 Environmental Impacts

CEQA Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons why any new and possibly significant effects of a project were determined not to be significant and were, therefore, not discussed in detail in the EIR. The County has engaged the public to participate in the scoping of the environmental document. The contents of this EIR were established based on a notice of preparation/initial study (NOP/IS) prepared in accordance with the *CEQA Guidelines*, as well as public and agency input that was received during the scoping process. Comments received on the NOP/IS are located in Appendix A of this EIR. Specific issues found to have no impact or less-than-significant impacts during preparation of the NOP/IS do not need to be addressed further in this EIR. Based on the findings of the NOP/IS and the results of scoping, a determination was made that this EIR must contain a comprehensive analysis of all environmental issues identified in *CEQA Guidelines* Appendix G except population and housing and recreation.

1.6.1 Impacts Not Further Considered in this EIR

As discussed in the NOP/IS (located in Appendix A of this EIR), the project was determined to have no impact with regard to the following resource areas, which are therefore not analyzed in this EIR.

- Population and Housing
- Recreation

1.6.2 Impacts of the Project

Sections 4.1 through 4.18 in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, provide a detailed discussion of the environmental setting, impacts associated with the project, and mitigation measures designed to reduce significant impacts to less-than-significant levels, when feasible. The impacts, mitigation measures, and residual impacts for the project are summarized in **Table 1-7: Summary of Impacts, Mitigation Measures, and Levels of Significance**, located at the end of this chapter, and are discussed further below.

Impacts related to the following resource areas are evaluated in this EIR for their potential significance:

- Aesthetics
- Air Quality
- Agriculture and Forestry Resources
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Public Services
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfires

1.6.3 Less-than-Significant Impacts

Table 1-3: Summary of Project Impacts that are Less than Significant or Less than Significant with Mitigation, presents those impacts of the project that were determined to be less than significant by themselves, or less than significant with implementation of mitigation measures. Less-than-significant cumulative impacts are also included in this table. Sections 4.1 through 4.18 of this EIR present detailed analysis of these impacts and describe the means by which the mitigation measures listed in **Table 1-3: Summary of Project Impacts That Are Less than Significant or Less than Significant with Mitigation**, would reduce impacts to a less-than-significant level.

TABLE 1-3: SUMMARY OF PROJECT IMPACTS THAT ARE LESS THAN SIGNIFICANT OR LESS THAN SIGNIFICANT WITH MITIGATION

Impact	Mitigation Measures
Aesthetics (Project)	MM 4.1-1 through MM 4.1-6
Agriculture (Project)	MM 4.2-1, and MM 4.9-1 and MM 4.9-2

Biological Resources (Project)	MM 4.4-1 through MM 4.4-13, and MM 4.1-4 through MM 4.1-6, and MM 4.10-1
Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-4
Energy (Project and Cumulative)	MM 4.3-1
Geology and Soils (Project and Cumulative)	MM 4.7-1 through MM 4.7-3, and MM 4.10-1
Greenhouse Gas Emissions (Project and Cumulative)	MM 4.3-1 through MM 4.3-5
Hazards and Hazardous Materials (Project and Cumulative)	MM 4.9-1 through MM 4.9-3, and MM 4.14-1, and MM 4.17-1
Hydrology and Water Quality (Project and Cumulative)	MM 4.10-1 through MM 4.10-2, and MM 4.9-1
Land Use and Planning (Project and Cumulative)	MM 4.11-1
Mineral Resources (Project and Cumulative)	MM 4.12-1
Noise (Project and Cumulative)	MM 4.13-1 through MM 4.13-3.
Public Services (Project and Cumulative)	MM 4.14-1 through MM 4.14-5
Transportation and Traffic (Project and Cumulative)	MM 4.15-1 through MM 4.15-2
Tribal Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-4
Utilities and Service Systems (Project and Cumulative)	MM 4.17-1 and MM 4.10-1
Wildfire (Project)	MM 4.10-1 and MM 4.14-1.

1.6.4 Significant and Unavoidable Impacts

CEQA Guidelines Section 15126.2(b) requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. Potential environmental effects of the project and proposed mitigation measures are discussed in detail in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR.

According to *CEQA Guidelines* Section 15355, the term cumulative impacts “... refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Individual effects that may contribute to a cumulative impact may be from a single project or a number of separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed projects, the effects could be cumulatively considerable. This EIR has considered the potential cumulative effects of the project along with other current and reasonably foreseeable projects. Impacts for the following have been found to be cumulatively considerable:

- Aesthetics (Cumulative)
- Agriculture and Forestry Resources (Project and cumulative)
- Air Quality (Project and cumulative – temporary construction only)
- Biological Resources (Cumulative)
- Wildfire (Cumulative)

Table 1-4: *Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Solar Facility*, presents those impacts at the project level and cumulatively. Sections 4.1, 4.4, and 4.18 of this EIR

present detailed analyses of these impacts and describe the means by which the mitigation measures listed in **Table 1-4**, would reduce the severity of impacts to the extent feasible.

TABLE 1-4: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE SOLAR FACILITY

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
Aesthetics	There would be no significant and unavoidable project impacts.	The project would have cumulatively significant and unavoidable aesthetic impacts related to visual character after implementation of mitigation. Although implementation of mitigation measures would reduce the adverse visual changes experienced at individual viewpoints, there are no mitigation measures that would allow for the preservation of the existing visual character of the area. The conversion of approximately 1,406 acres of privately owned land to a solar energy production facility is considered a significant and unavoidable cumulative impact.	MM 4.1-1 through MM 4.1-6
Agriculture and Forestry	The Kern County Board of Supervisors would consider the project proponent's petition for cancellation of the Williamson Act Contract concurrent with the consideration of the necessary land use approvals, and review all information and data provided to determine if the two findings can be made and the cancellation can be granted. Therefore, once all the findings have been satisfied, Kern County has the ability to approve the Petition for Cancellation of Contract. As such, the applicant would be obligated to pay the cancellation fees pay the Williamson Act contract cancellation fee as determined by the Kern County Assessor's Office, which would be required as a Condition of Approval of the proposed Conditional Use Permits by the lead agency. With the payment of the cancellation fee, the contract cancellation process would be completed. However, payment of fees does not fully mitigate for conversion of farmland that would be a result of the cancellations of the contracts. Therefore, Williamson Act contract	Cumulative projects, which are subject to Williamson Act Contracts in non-renewal status, would not be developed until the existing Williamson Act Contracts expire and similarly would not result in any conflicts related to cancellation of an open space contract or a Farmland Security Zone contract. The project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts would be less than significant. Notwithstanding the beneficial factors of the proposed project, which reduce project impacts, the cancellation of approximately 640 acres of contracted lands, combined with other projects projected in the Kern County General Plan over the 30-year life of the project would result in a cumulatively significant and unavoidable impact .	MM 4.2-1, and 4.9-1 through 4.9-2

cancellations would constitute a significant and unavoidable impact .			
Air Quality	The uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM _{2.5} along with indirect linkages of criteria pollutants and COVID-19 on vulnerable populations could result in significant and unavoidable impacts .	Potential cumulative impacts to air quality could occur from construction and operation of the proposed project in combination with regional growth projections in the same air basin. It is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. The SJVAPCD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the San Joaquin Valley Air Basin at the present time and it has not provided methodology to assess the specific correlation between mass emission generated and the effect on public health and welfare. Therefore, cumulative impacts for criteria pollutants are considered significant and unavoidable .	MM 4.3-1 through MM 4.3-8
Biological Resources	There would be no significant and unavoidable project impacts.	Given the number of present and reasonably foreseeable future development projects in the San Joaquin Valley, the proposed project, when combined with other projects, would contribute to cumulative loss of habitat for special-status species. Implementation of Mitigation Measures would reduce impacts to habitat to less than significant for the proposed project. However, the proposed project, when combined with other related development projects proposed throughout the County, would cumulatively impact habitat for special-status species. Thus, cumulative impacts would be significant and unavoidable .	MM 4.4-1 through MM 4.4-13, and MM 4.1-4 through MM 4.1-6, and MM 4.10-1
Wildfire	There would be no significant and unavoidable project impacts.	Given the location is subject to high wind speeds, and is a rural area with limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable impact .	MM 4.10-1 and MM 4.14-1

1.6.5 Growth Inducement

The Kern County General Plan recognizes that certain forms of growth are beneficial, both economically and socially. *CEQA Guidelines* Section 15126.2(d) provides the following guidance on growth-inducing impacts:

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

Growth inducement can be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the project would not induce substantial growth. During project operation, one to two employees would be onsite intermittently every month (less than four trips a week) to perform maintenance duties. It is anticipated that the construction workforce would commute to the site each day from local communities, and the majority would likely come from the existing labor pool as construction workers travel from site to site as needed. Construction staff not drawn from the local labor pool would stay in any of the local hotels in local communities.

Although the project would contribute to the energy supply, which supports growth, the development of power infrastructure is a response to increased market demand. It does not induce new growth. Kern County planning documents already permit and anticipate a certain level of growth in the area of the project 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 any new growth. Therefore, any link between the project and growth in Kern County would be speculative.

In *Kerncrest Audubon Society v. Los Angeles Department of Water and Power*, the analysis of growth-inducing effects contained in the EIR for the Pine Tree Wind Development Project was challenged. Plaintiffs argued that the discussion was too cursory to provide adequate information about how additional electricity generated by the project would sustain further growth in the Los Angeles area. The court held that the additional electricity that the project would produce was intended to meet the current forecast of growth in the Los Angeles area. As such, the wind development project would not cause growth, and so it was not reasonable to require a detailed analysis of growth-inducing impacts. In addition, EIRs for similar energy projects have contained similarly detailed analyses of growth-inducing impacts. Their conclusions that increasing the energy supply would not create growth has been upheld, because: (1) the additional energy would be used to ease the burdens of meeting existing energy demands within and beyond the area of the project; (2) the energy would be used to support already-projected growth; or (3) the factors affecting growth are so multifarious that any potential connection between additional energy production and growth would necessarily be too speculative and tenuous to merit extensive analysis. Thus, as has been upheld in the courts, this level of analysis provided in this EIR is adequate to inform the public and decision makers of the growth-inducing impacts of the project.

1.6.6 Irreversible Impacts

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

Build-out of the project would commit nonrenewable resources during project construction. During project operations, oil, gas, and other fossil fuels and nonrenewable resources would be consumed, primarily in the form of transportation fuel for project employees. Therefore, an irreversible commitment of nonrenewable resources would occur as a result of long-term project operations. However, assuming that those commitments occur in accordance with the adopted goals, policies, and implementation measures of the Kern County General Plan, as a matter of public policy, those commitments have been determined to be acceptable. The Kern County General Plan ensures that any irreversible environmental changes associated with those commitments will be minimized.

1.7 Alternatives to the Project

CEQA Guidelines Section 15126.6 states that an EIR must address “a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” Based on the significant environmental impacts of the project, the aforementioned objectives established for the project and the feasibility of the alternatives considered, a range of alternatives is analyzed below and discussed in detail in Chapter 6, *Alternatives*, of this EIR.

1.7.1 Alternatives Considered and Rejected

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (*CEQA Guidelines* Section 15126.6(c)). Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, also do not need to be considered (*CEQA Guidelines* Section 15126(f)(2)). Kern County considered several alternatives to reduce impacts to aesthetics (project and cumulative), air quality (cumulative only), biological resources (cumulative only), and wildfire (cumulative only). Per CEQA, the lead agency may make an initial determination as to which alternatives are feasible and warrant further consideration, and which are infeasible. The following alternatives were initially considered but were eliminated from further consideration in this EIR because they do not meet project objectives or were infeasible.

The Wind Energy Project Alternative would involve the use of wind energy as an alternative to development of a solar site. Similar to solar power, energy production from wind is an alternative to energy production from coal, oil, or nuclear sources. Wind energy provides the following benefits:

- It is a renewable and infinite resource.
- It is free of any emissions, after installation, including carbon dioxide (GHG).
- It is a free resource after the capital cost of installation (excluding maintenance).

In addition, energy production from wind power would not require the significant water usage associated with coal, nuclear, and combined-cycle sources. Turbines used in wind farms for commercial production of electric power are usually three-bladed units that are pointed into the wind by computer-controlled motors. The wind farm would consist of a group of wind turbines placed where electrical power is produced. The individual turbines would be interconnected with a medium-voltage power collection system and a communications network. At a substation, the medium-voltage electrical current would be increased through a transformer before connection to the high-voltage transmission system. 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. Wind turbines would also have the potential to affect avian species in the local area. In addition, in order for wind turbines to produce an equivalent 60 MW of power that the project would produce, the alternative would require more space than what the project site current accommodates and, consequently, the project site would need to be expanded.

As noted above, some of the project objectives are to develop a solar project that will help meet the increasing demand for clean, renewable electrical power, as well as help California meet its statutory and regulatory goals of generating more renewable power with minimum potential for environmental effects by using proven and established PV technology that is efficient, requires low maintenance and is recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels, require FAA lighting and are more visible from many viewpoints.
- It may result in additional/greater biological resources impacts to avian species than the project.
- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.
- It may result in increased land use and planning impacts associated with the project due to the need for an increased project site.

Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 60 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation. However, byproducts of industrial power plant operation need to be considered in both design and operation. When waste heat that results from the finite efficiency of the power cycle is not recovered and used as steam or hot water, it must be released to the atmosphere, and often uses a cooling tower as a cooling medium (especially for condensing steam). The flue gas from combustion of the fossil fuels is discharged to the air and contains carbon dioxide and water vapor as well as other substances, such as nitrogen, nitrogen oxides, and sulfur oxides. Furthermore, unlike the proposed project, fossil fuel-powered plants are major emitters of GHGs. In addition, industrial power plants generally involve the construction of large structures, such as cooling towers and gas stacks, as well as a large number of employees to operate the facility on a 24/7 basis 365 days a year. Accordingly, the development of an industrial power plant would typically result in greater adverse impacts related to: (1) aesthetics and the local visual setting of the project area; (2) air quality and GHG emissions; (3) land use and planning conflicts with the rural development of the surrounding area; (4) noise from the plant operations; (5) traffic from increased employment at the facility; and (6) demand on public utilities, including water and waste disposal.

As noted above, some of the objectives for the proposed project are to develop a solar project that would help meet the increasing demand for clean, renewable electrical power as well as help California meet its statutory and regulatory goals of generating more renewable power with minimum potential for environmental effects. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would result in additional/greater impacts than the proposed project including aesthetics, air quality, GHG emissions, land use and planning, noise, transportation and traffic, and public utilities, including water use and disposal.
- Depending on siting, it may also result in greater biological resources impacts than the project.
- It would not contribute to the statewide renewable energy and GHG reduction objectives as this alternative would use non-renewable energy to produce electricity.

Alternative Site

This alternative would involve the development of the proposed project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in the Antelope Valley desert region of the County. This alternative is assumed to involve construction of a 60 MW PV solar facility and 55 MW BESS on a site totaling 640 acres. *CEQA Guidelines* Section 15126.6(f)(2)(a) states that the key and initial step in considering an alternative site is whether “any of the significant effects of the project would be avoided or substantially lessened” in relocating the project, while remaining consistent with the same basic objectives of the proposed project.

The valley region of the County has attracted renewable energy development applications that are being proposed for vacant land or land with a history of agricultural uses. The availability of alternative sites is constrained by the renewable energy market itself. While other sites with similar size, configuration, and use history may exist in the valley region, alternative project sites in the area are likely to have similar project and cumulatively significant impacts after mitigation, including cumulatively significant impacts to aesthetics, agricultural resources, and biological resources. This is based on the known general conditions in the area and the magnitude of the project.

In addition, alternative sites for the project are not considered to be “potentially feasible,” as there are no suitable sites within the control of the project proponent that would reduce project impacts. The potential amount of available, similar sites is further reduced because unlike the proposed project, alternative sites may not include sites with close proximity to transmission infrastructure. As noted above, alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated because it would not avoid or substantially reduce the significant environmental effects of the proposed project.

1.7.2 Alternatives Selected for Analysis

The following alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project, but which may avoid or substantially lessen any of the significant impacts of the project. The following alternatives are analyzed in detail in this chapter of the EIR:

- Alternative 1: No Project Alternative
- Alternative 2: Zoning Build-Out Alternative
- Alternative 3: Reduced Acreage Alternative
- Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only

Table 1-5: *Summary of Development Alternatives*, on the following page provides a summary of the relative impacts and feasibility of each alternative and **Table 1-6:** *Comparison of Alternatives*, provides a summary side-by-side comparison of the potential impacts of the alternatives and the project. A complete discussion of each alternative is provided below.

TABLE 1-5: SUMMARY OF DEVELOPMENT ALTERNATIVES		
Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 640 acres would generate up to 60 MW of electricity with the capacity to store up to 55 MW of energy. Approval of two Conditional Use Permits (CUPs) (one for construction and operation of commercial solar electrical generating facilities, one for communications towers), cancellation of a Williamson Act contract would be required.	N/A
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul style="list-style-type: none"> • Required by CEQA • Avoids need for CUPs and Williamson Act contract cancellation • Avoids all significant and unavoidable impacts • Greater impacts to greenhouse gas (GHG) emissions • Less impact in all remaining environmental issue areas • Does not meet any of the project objectives
Alternative 2: Zoning Build-Out Alternative	Project site would be developed with active agricultural production as allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions.	<ul style="list-style-type: none"> • Avoids need for CUPs and Williamson Act Contract Cancellations • Similar impacts to biological resources, hazards and hazardous materials • Less impact to aesthetics, agricultural and forestry resources • Greater impacts to energy, greenhouse gases (GHG) emissions, hydrology and water quality, and utilities and service systems as it relates to water supply. • Less overall impacts in all remaining environmental issue areas • Does not meet any of the project objectives

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 3: Reduced Acreage Alternative	Construction and operation of one solar facility on approximately 448 acres. This alternative would construct a solar array field capable of generating approximately 42 MW of electricity and storing 27 MW of electricity, thereby reducing the project's renewable energy output by 30 percent. The project site would require issuance of CUPs and a Williamson Act contract cancellation.	<ul style="list-style-type: none"> • Similar impacts to greenhouse gas emissions, hazards and hazardous materials, land use and planning, noise, public services, transportation and traffic, and utilities and service systems • Decreased GHG offset benefits to meet project objectives • Less impact in all remaining environmental issue areas • Does not meet all the project objectives
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 60 MW of PV solar distributed on rooftops throughout the valley region of Kern County. Electricity generated would be for onsite use only.	<ul style="list-style-type: none"> • Avoids need for solar facility CUPs, telecommunication tower CUPs, SPAs, ZCCs and requests to vacate public access easements at the project site but may require other entitlements (such as a CUP or variance) on other sites • Avoid significant and unavoidable impacts associated with aesthetics, air quality, and biological resources • Greater impacts to GHG emissions land use and planning, and noise • Similar impacts energy • Less impact in all remaining issue areas • Does not meet all the project objectives areas nor does this alternative account for energy storage system (ESS) component of the project

TABLE 1-6: COMPARISON OF ALTERNATIVES

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Specific Plan and Zoning Build- Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and Unavoidable (cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agricultural and Forestry Resources	Significant and Unavoidable (cumulative)	Less (NI)	Less (NI)	Similar (SU)	Less (NI)
Air Quality	Significant and Unavoidable (project and cumulative – temporary construction only)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	Less (NI)	Similar (SU)	Less (SU)	Less (LTS)
Cultural Resources	Less than Significant with Mitigation	Similar (NI)	Greater (LTS)	Similar (LTS)	Similar (LTS)
Energy	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Similar (LTS)
Geology and Soils	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than Significant	Greater (LTS)	Greater (LTS)	Greater (LTS)	Greater (LTS)
Hazards and Hazardous Materials	Less than Significant with Mitigation	Less (NI)	Similar (LTS)	Similar (LTS)	Less (LTS)
Hydrology and Water Quality	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Land Use and Planning	Less than Significant with Mitigation	Less (NI)	Less (NI)	Similar (LTS)	Greater (LTS)
Mineral Resources	Less than Significant	Less (NI)	Similar (LTS)	Similar (LTS)	Less (NI)
Noise	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Similar (LTS)
Public Services	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation and Traffic	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Tribal Cultural Resources	Less than Significant with Mitigation	Similar (NI)	Greater (LTS)	Similar (LTS)	Similar (NI)

TABLE 1-6: COMPARISON OF ALTERNATIVES

Environmental Resource	Proposed Project	Alternative 2:		Alternative 3:	Alternative 4:
		Alternative 1: No Project Alternative	Specific Plan and Zoning Build- Out Alternative	Reduced Acreage Alternative	No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Utilities and Service Systems	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Wildfires	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	Less (SU)	Greater (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Some	None	All
NI = No Impact LTS = Less than Significant SU = Significant and Unavoidable					

1.7.3 Alternative 1: No Project Alternative

The *CEQA Guidelines* require EIRs to include a No Project Alternative for the purpose of allowing decision makers to compare the effects of approving the proposed project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the 60 MW solar PV facility and associated facilities on the 640-acre site would not occur. No collection lines would be constructed. The No Project Alternative would not require Conditional Use Permits (CUP), and Williamson Act Land Use Contract Cancellations for construction and operation of a 60 MW solar project. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped agriculture land. No physical changes would be made to the project site.

1.7.4 Alternative 2: Zoning Build-Out Alternative

Alternative 2, the Agricultural Production Alternative, would develop the project site for active agricultural production. The project site is designated as Kern County General Plan Map Codes 8.3 (Extensive Agriculture; 8.3/2.5 (Extensive Agriculture/Flood Hazard Overlay). No solar facilities would be developed under this alternative and, therefore, no Conditional Use Permits or Williamson Act Contract cancellations would be required for this alternative. The project site would be developed in accordance with the existing agricultural zone designations.

Implementation of Alternative 2 would consist of developing the project site under the current land use classifications of 8.3 Extensive Agriculture and 8.3/2.5 (Extensive Agriculture/Flood Hazard Overlay). The 8.3 (Extensive Agriculture land use designation applies to areas devoted to the production of irrigated crops or having a potential for such use. Typical uses include irrigated cropland, farm facilities and related uses, livestock grazing, water storage and groundwater recharge areas, mineral, aggregate, and petroleum exploration and extraction, public utility uses, and agricultural industries.

Given the land use and zoning designations described above, this alternative would include the development of agricultural production on the entire project site and associated infrastructure for agricultural production such as irrigation systems. No CUPs for solar facility construction and operation would be required for this alternative. In addition, no Williamson Act Land Use Contract Cancellations would be required under this alternative as the proposed uses would be allowed under these contracts.

1.7.5 Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, a 30% reduction in developable acreage, and a 30% reduction in MW is proposed. To achieve this a solar facility with the capacity to generate up to 42 MW of renewable electric energy. Under Alternative 3, the project acreage would be reduced to 448 acres (from the 640-acres proposed under the project). The overall developable acreage under Alternative 3 would be 238-acres. The gen-tie interconnection would remain unchanged. Development Alternative 3 would include construction of a substation, 27 MW energy storage facility, and associated infrastructure, as under the project. Eliminating development 30% of the developable acreage from the project would reduce the project's total generation capacity from 60 MW to 42 MW, and reduce the developed area from approximately 640 acres to approximately 448 acres. Similar to the project, this alternative would require

issuance of CUPs and Williamson Act Contract Cancellations for construction and operation of a commercial solar electrical generating facility.

1.7.6 Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Under this alternative, no new land would be developed or altered. However, depending on the type of solar modules installed and the type of tracking equipment used (if any), a similar or greater amount of acreage (i.e., greater than 640 acres of total rooftop area) may be required to attain project's capacity of 60 MW of solar PV generating capacity. Because of space or capital cost constraints, many rooftop solar photovoltaic systems would be fixed-axis systems or would not include the same type of sun-tracking equipment that would be installed in a freestanding utility-scale solar PV project and, therefore, would not attain the same level of efficiency with respect to solar energy generation. Alternative 4 would generate 60 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed on site by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

1.7.7 Environmentally Superior Alternative

As presented in the comparative analysis above, and as shown in **Table 6-2: Comparison of Alternatives**, there are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. Alternative 1, the No Project Alternative, would be environmentally superior to the project on the basis of its minimization or avoidance of physical environmental impacts. However, *CEQA Guidelines* Section 15126.6(e)(2) states:

The “no project” analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, 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. If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, agriculture and forestry resources, air quality, and biological resources. Impacts related to GHG emissions would be greater under this alternative due to the assumed lower efficiency of the distributed systems, which would not include solar tracking technology and it would not include BESS. This alternative could

potentially result in greater impacts to land use and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, the No Ground-Mounted Utility-Solar Development Alternative would result in less impact to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, public services, transportation and traffic, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the proposed project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the proposed project because the project proponent lacks control and access to the sites required to develop 60 MW of distributed solar generated electricity; additionally, doing so would be economically infeasible. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

1.8 Areas of Controversy

Areas of controversy were identified through written agency and public comments received during the scoping period. Public comments received during the scoping period are provided in Appendix A. In summary, the following issues were identified during scoping and are addressed in the appropriate sections of Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*:

- Impacts related to agriculture
- Impacts related to air quality
- Impacts related to biological resources

1.9 Issues to Be Resolved

CEQA Guidelines Section 15123(b)(3) requires that an EIR contain issues to be resolved, which includes the choices among alternatives and whether or how to mitigate significant impacts. The following major issues are to be resolved:

- Determine whether the EIR adequately describes the environmental impacts of the project;
- Choose among alternatives;
- Determine whether the recommended mitigation measures should be adopted or modified; and
- Determine whether additional mitigation measures need to be applied to the project.

1.10 Summary of Environmental Impacts and Mitigation Measures

Table 1-7: *Summary of Impacts, Mitigation Measures, and Level of Significance*, summarizes the environmental impacts of the project, mitigation measures, and unavoidable significant impacts identified

and analyzed in Sections 4.1 through 4.18 of this EIR. Refer to the appropriate EIR section for additional information.

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.1 Aesthetics			
Impact 4.1-1: The project would have a substantial adverse effect on a scenic vista.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.1-2: The project would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.1-3: The project would, 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 publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.	Potentially Significant	<p>MM 4.1-1: Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County Planning and Natural Resources Department. The program shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities. b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department. c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers to prevent pest/rodent access to food waste receptacles shall be 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.</p> <p>d. Trash and food items shall be contained in closed secured containers at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.</p> <p>MM 4.1-2: Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the Kern County Planning and Natural Resources Department, that will ensure all project facilities including operations and maintenance buildings, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.</p> <p>MM 4.1-3: Wherever possible, within the proposed project boundary the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.</p> <p>a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to re-vegetate with the existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation. The seed mix or native plants shall be determined through consultation with professionals such as</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting.</p> <p>b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, and (4) a clear prohibition of the use of toxic rodenticides.</p> <p>c. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish re-vegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time).</p> <p>d. Vegetation/ground cover shall be continuously maintained on the site by the project operator.</p> <p>e. The re-vegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for each of the three years. Should a 75% rate not be feasible through consultation with a qualified botanist, evidence of such shall be submitted to Kern County Planning and Natural Resources Department and an appropriate coverage rate shall be established. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity,</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.	
Impact 4.1-4: The project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.	Potentially significant	<p>MM 4.1-4: Prior to commencement of project operations of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Staff that the project site complies with the applicable provisions of the <i>Dark Skies Ordinance</i> (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.</p> <p>MM 4.1-5: Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department.</p> <p>MM 4.1-6: Prior to commencement of project operations of the solar facility, the project operator shall demonstrate that all onsite buildings utilized non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.</p>	Less than significant
Impact 4.1: Cumulative Impacts	Potentially Significant	Implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6 is required.	Significant and unavoidable

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.2 Agriculture and Forestry Resources			
Impact 4.2-1: The project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.2-2: The project would conflict with existing zoning for agricultural use or Williamson Act Contract.	Potentially Significant	No mitigation would be required.	Significant and unavoidable
Impact 4.2-3: The project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	No impact	No mitigation would be required.	Less than significant
Impact 4.2-4: The project would result in the loss of forestland or conversion of forest land to non-forest use.	No impact	No mitigation would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.2-5: The project would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.	Potentially significant	Implement Mitigation Measures MM 4.9-1 and MM 4.9-2 would be required (See Section 4.9, <i>Hazards and Hazardous Materials</i> , in this EIR for the full mitigation text).	Less than significant
Impact 4.2-6: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 acres or more (Public Resources Code Section 15206(b)(3)).	Potentially significant	MM 4.2-1: Prior to issuance of any grading or building permit or any use of the property for storage of materials or panels, cancellation of all Williamson Act contracts shall be completed for the project development area or the period for nonrenewal shall have been completed and the identified parcels determined to no longer be under contract.	Significant and unavoidable.
Impact 4.2: Cumulative Impacts	Potentially significant	Implement Mitigation Measure MM 4.2-1	Significant and unavoidable
4.3 Air Quality			
Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	Potentially significant	MM 4.3-1: To control NO _x and PM emissions during construction, the project proponent/operator and/or its contractor(s) shall implement the following measures during construction of the project, subject to verification by the County: <ul style="list-style-type: none"> a. Off-road equipment engines over 25 horsepower shall be equipped with EPA Tier 3 or higher engines, unless Tier 3 construction equipment is not locally available. b. All equipment shall be maintained in accordance with the manufacturer's specifications. c. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes. 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> d. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes. e. Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment. f. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOX emissions. g. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines. h. Existing electric power sources shall be used to the extent feasible. This measure would minimize the use of higher polluting gas or diesel generators. i. The hours of operation of heavy-duty equipment and/or the quantity of equipment in use shall be limited to the extent feasible. <p>MM 4.3-2: To control fugitive PM emissions during construction, prior to the issuance of grading or building permits and any earthwork activities, the project proponent shall prepare a comprehensive Fugitive Dust Control Plan for review by the Kern County Planning and Natural Resources Department. The plan shall include all SJVAPCD-recommended measures, including but not limited to, the following:</p> <ul style="list-style-type: none"> a. Soil being actively excavated, trenches, graded, or undergoing earthmoving activities shall be pre-watered and during work, sufficiently watered to prevent excessive dust. Wind barriers also may be erected to reduce wind driven erosion. Watering shall occur as needed with complete coverage of disturbed soils areas. Watering shall take place a minimum of three times daily where soil is being actively disturbed, unless dust is otherwise controlled by rainfall or use of a dust suppressant. 	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> b. Vehicle speed for all on site (i.e., within the project boundary) construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads. c. Vehicle speeds on all offsite unpaved project-site access roads (i.e., outside the project boundary) construction vehicles shall not exceed 25 mph. Signs identifying vehicle speed limits shall be posted along unpaved site access roads and at the site entrance/exit. d. All onsite unpaved roads and offsite unpaved public project-site access road(s) shall be effectively stabilized of dust emissions using water or SJVAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys). Reclaimed (non-potable) water shall be used to the extent available and feasible. Areas not being activity graded and that will be inactive for an extended period shall have water or dust suppressants applied to form a visible crust. Vehicle access to these areas shall be limited. e. The amount of the disturbed area (e.g., grading, excavation) shall be reduced and/or phased where possible. f. All disturbed areas shall be sufficiently watered or stabilized by SJVAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20 percent 	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available and feasible.	
		g. All clearing, grading, earth moving, and excavation activities shall cease during periods when dust plumes of 20 percent or greater opacity affect public roads or nearby occupied structures.	
		h. All disturbed areas anticipated to be inactive for periods of 30 days or more shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an SJVAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips.	
		i. All active and inactive disturbed surface areas shall be stabilized, where feasible.	
		j. Equipment and vehicle access to disturbed areas shall be limited to only those vehicles necessary to complete the construction activities.	
		k. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil-disturbing activities.	
		l. Stockpiles of dirt or other fine loose material and bulk materials shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20 percent opacity. If necessary and where feasible, three-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust.	
		m. Water or approved dust suppressant shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust.	
		n. Where acceptable to the fire department and feasible, weed control shall be accomplished by mowing (either mechanical	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>or via livestock grazing) instead of disking, thereby leaving the ground undisturbed and with a mulch covering.</p> <p>o. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least six inches of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114.</p> <p>p. Gravel pads, grizzly strips, or other material track-out control methods approved for use by SJVAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.</p> <p>q. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or rocks/grates at the project entry points shall be used, when necessary, to remove soil deposits and minimize the track-out/deposition of soil onto nearby paved roadways.</p> <p>r. During construction paved road surfaces adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.</p> <p>s. Portable equipment, 50 horsepower or greater, used during construction activities (e.g., portable generators) shall require California statewide portable equipment registration (issued by CARB) or an SJVAPCD permit.</p> <p>t. The Fugitive Dust Control Plan shall identify a designated person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures, as necessary, to minimize the transport of dust off site and to ensure compliance with identified fugitive dust control measures. Contact information for a hotline shall be posted on site should any complaints or concerns be received during working hours</p>	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>and holidays and weekend periods when work may not be in progress. The names and telephone numbers of such persons shall be provided to the SJVAPCD Compliance Division prior to the start of any grading or earthwork.</p> <p>u. Signs shall be posted at the project site entrance and written notifications shall be provided a minimum of 30 days prior to initiation of project construction to residential land uses located within 1,000 feet of the project site. The signs and written notifications shall include the following information: (a) Project Name; (b) Anticipated Construction Schedule(s); and (c) Telephone Number(s) for designated construction activity monitor(s) or, if established, a complaint hotline.</p> <p>v. The designated construction monitor shall document and immediately notify SJVAPCD of any air quality complaints received. If necessary, the project operator and/or contractor will coordinate with SJVAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.</p> <p>MM 4.3-3: Prior to the issuance of building and grading permits, the project proponent shall provide the Kern County Planning and Community Development Department with proof that an Indirect Source Review application has been approved by the San Joaquin Valley Air Pollution Control District. The project proponent shall enter into a developer agreement with SJVAPCD and conduct an air impact assessment as required by SJVAPCD Rule 9510. Offsite emission reduction fees shall be calculated, as dictated by Rule 9510, to reduce construction-related NOX emissions by 20% and PM10 emissions by 45%.</p> <p>MM 4.3-4: Prior to the issuance of grading or building permits, the project proponent shall submit documentation to demonstrate how the following grading measures will be implemented during construction activities:</p> <p>a. A minimum of 15 days prior to commencement of construction activities, the project proponent shall provide a copy of the</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>construction and grading schedule to the public through direct mailing to all parcels within 1,000 feet of the project site. The notices shall include the construction schedule and a telephone number where complaints can be registered. Signs legible at a distance of 50 feet shall also be posted at the construction site through construction activities and will include the same details as the notices.</p> <p>b. The project proponent shall establish a “Construction Coordinator.” The construction coordinator shall be responsible for the following:</p> <ol style="list-style-type: none"> 1. Responding to any local complaints about construction activities. The construction coordinator shall determine the cause of the construction complaint and shall be required to implement reasonable measures such that the complaint is resolved.; 2. Ensuring all appropriate construction notices have been made available to the public and all appropriate construction signs have been installed; and 3. Providing to the Kern County Planning and Community Development Department a weekly log of all construction - related complaints (i.e. blowing dust, inability to access parcels, etc...) during project construction activities and the measures that were undertaken to address those concerns. <p>MM 4.3-5: Prior to the issuance of grading or building permits, the project proponent shall submit a comprehensive Phased Grading Plan for review and approval by the Kern County Planning and Community and Community Development Department. The Phased Grading Plan shall include the following:</p> <ol style="list-style-type: none"> a. Identify a comprehensive grading schedule for the entire project site. b. Minimizing all grading activities to those areas necessary for project access and installation of solar panels and other associated infrastructure associated with the solar facility. 	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Construction of solar panels shall commence on areas that have undergone initial grading within 20 calendar days.</p> <p>c. Identify, in addition to those measures required by the San Joaquin Valley Air Pollution Control District, all measures being undertaken during construction activities and operational activities to ensure dust being blown off site is minimized. Measures may include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Increased use of water and or use of dust suppressant; 2. Pre-seeding and/or use of wood chips as permitted by the San Joaquin Valley Air Pollution Control District; and 3. Construction of dust screening around the project site. 	
Impact 4.3-2: Construction and operation of the project would expose sensitive receptors to substantial pollutant concentrations.	Potentially significant	<p>MM 4.3-6: To minimize personnel and public exposure to potential Valley Fever–containing dust on and off site, the following control measures shall be implemented during project construction:</p> <ol style="list-style-type: none"> a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations. b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground. c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area. d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying. e. To the greatest extent feasible, heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system. f. Workers shall receive training in procedures to minimize activities that may result in the release of airborne 	<p>Less than significant (Toxic air contaminants except COVID-19)</p> <p>Significant and unavoidable (COVID-19)</p>

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p><i>Coccidioides immitis</i> (CI) spores, to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department within 5 days of the training session.</p> <p>g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department.</p> <p>h. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to onsite personnel, upon request. When exposure to dust is unavoidable, provide appropriate NIOSH-approved respiratory protection to affected workers. If respiratory protection is deemed necessary, employers must develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144).</p> <p>MM 4.3-7: Prior to the issuance of grading permits, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of \$3,200 for Valley Fever public awareness programs.</p> <p>MM 4.3-8: At the time of project implementation, a COVID-19 Health and Safety Plan should be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy of the COVID-19 Health and Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department for review and approval.</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.3-3: Construction and Operation of the project would Result in Other Emissions (such as those leading to odors) Adversely Affecting a Substantial Number of People.	Less than significant	No mitigation would be required.	Less than significant
Cumulative Impacts Impact 4.3-4: Construction and operation of the project would result in a cumulatively considerable net increase of any criteria pollutant for which the projects' region is nonattainment under applicable federal or State ambient air quality standards.	Potentially significant	Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-8 would be required.	Significant and unavoidable (Construction) Less than significant (Operation)

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.4 Biological Resources			
Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	Potentially significant	<p>Implementation of Mitigation Measures MM 4.1-4 through MM 4.1-6 would be required (see Sections 4.1, <i>Aesthetics</i>, for full mitigation measure text).</p> <p>MM 4.4-1: Prior to the issuance of grading or building permits and prior to decommissioning, the project operator shall retain a Lead Biologist or approved Biological Monitor who meets the qualifications of an Authorized Biologist as defined by U.S. Fish and Wildlife Service to oversee compliance with protection measures for all listed and other special-status species. The Lead Biologist or approved Biological Monitor shall be on the project site during construction of perimeter fencing and grading activities throughout the construction phase, and as-needed during decommissioning. The Lead Biologist or approved Biological Monitor shall have the right to halt all activities that are in violation of the special-status species protection measures. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The Lead Biologist or approved Biological Monitor shall have in their possession a copy of all the compliance measures and appropriate Plans while work is being conducted on the project site.</p> <p>MM 4.4-2: Prior to the issuance of grading or building permits and for the duration of construction and decommissioning activities, within one week of employment all new construction workers at the project site, laydown area and/or transmission routes shall attend an Environmental Awareness Training and Education Program, developed and presented by the Lead Biologist. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Environmental Awareness Training and Education Program.</p> <p>The program shall include information on the life history of the BNLL, SJKF, giant kangaroo rat, raptors, American badger, as well as other wildlife and plant species that may be encountered</p>	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>during construction activities. The program shall also discuss the legal protection status of each species, the definition of “take” under the federal Endangered Species Act and California Endangered Species Act, measures the project operator is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of the federal Endangered Species Act or California Endangered Species Act.</p> <ul style="list-style-type: none"> a. An acknowledgement form signed by each worker indicating that Environmental Awareness Training and Education Program has been completed would be kept on record; b. A sticker shall be placed on hard hats indicating that the worker has completed the Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker; c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Environmental Awareness Training and Education Program and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Community Development Department; d. The construction crews and contractor(s) shall be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits; and e. An Operation and Maintenance-phase version of the WEAP will be maintained within the onsite O&M facility for review as may be necessary during the life of the project <p>MM4.4-3: A weed control plan shall be prepared to address the control of invasive weeds and plants. The weed control plan shall be in place prior to construction activities and shall be completed</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>to the satisfaction of the County Planning Department. The plan shall include a risk assessment of the invasive weed and plant species currently known within the project site, procedures to control their spread on-site and to adjacent off-site areas, and procedures to minimize the introductions of new weed and plant species. The Weed Control Plan shall include preventive measures that would minimize the potential establishment of invasive weed and plant species during project implementation. To minimize the spread and establishment, tires and surfaces of all trucks and construction equipment shall be cleaned with water or high-pressure air prior to commencing work in off-site areas, and/or the use of rocks/grates at the entries to the project site shall be installed to physically dislodge seeds. Certified weed-free mulch shall be used when stabilizing areas of disturbed soils and on-site soils shall be used to the maximum extent practicable for fill. This measure also shall apply during decommissioning activities.</p> <p>MM 4.4-4: During construction, operations and maintenance, and decommissioning the project operator shall implement the following general avoidance and protective measures:</p> <ol style="list-style-type: none"> All proposed impact areas, including solar fields, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided. The project operator shall limit the areas of disturbance to the extent feasible. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas. Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best management practices shall be employed to prevent erosion in accordance with the project's approved 	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>stormwater pollution prevention plan (SWPPP). All detected erosion shall be remedied within 2 days of discovery or as described in the SWPPP.</p> <p>d. To prevent inadvertent entrapment of San Joaquin kit foxes, American badgers, or other wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks. All holes and trenches, whether covered or not, shall be inspected for trapped wildlife at the start and end of each workday. Before such holes or trenches are filled, they shall be thoroughly inspected by the Lead Biologist or approved biological monitor for trapped wildlife. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is found trapped, all work in the vicinity of the animal shall cease immediately. If the animal is apparently uninjured, then the Lead Biologist shall directly supervise the provision of escape structures and/or trench modification to allow the trapped animal to escape safely. Work shall not resume in the vicinity of the animal, and it shall be allowed to leave the work area and project site on its own. If the listed animal is injured, then the Lead Biologist or approved biological monitor shall immediately contact the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife to identify an individual with the appropriate permit or authorization to handle listed species, who shall bring the animal to a pre-identified wildlife rehabilitation or veterinary facility for care.</p> <p>e. Burrowing owls, mammals, and nesting birds may use construction pipes, culverts, or similar structures for refuge or nesting. All towers shall be of the monopole variety and all hollow vertical structures, such as solar mount poles, or fencing poles, shall be capped immediately after installation to prevent bird entrapment. Therefore, all construction pipes,</p>	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>culverts, or similar structures with a diameter of 4 inches or more that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until the Lead Biologist has been consulted and the animal has either moved from the structure on its own accord (for listed species) or until the animal has been captured and relocated (for non-listed species) by the Lead Biologist. If the animal is a listed species, then work shall immediately halt in the vicinity, and the animal shall be allowed to move from the structure and the work area of its own accord. The Lead Biologist will direct work stoppages near the animal to allow it to freely move out of the pipe and away from the work area. Listed species shall not be handled or captured by anyone without the appropriate permit or authorization.</p> <p>f. No vehicle or equipment parked on the project site shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of wildlife. If present, the animal shall be left to move on its own.</p> <p>g. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated work areas shall be prohibited.</p> <p>h. A speed limit of 15 miles per hour shall be enforced within the limits of the proposed project.</p> <p>i. A long-term trash abatement program shall be established for construction, operations and maintenance, and decommissioning. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.</p> <p>j. Workers shall be prohibited from bringing pets and firearms to the project area and from feeding wildlife.</p>	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>k. Intentional killing or collection of any plant or wildlife species shall be prohibited.</p> <p>l. To enable kit foxes and other wildlife (e.g., American badger) to pass through the project site after construction, the security fence, and any permanent interior fencing shall be a wildlife friendly design that meets the goals of allowing wildlife to move freely through the project site during operation, leaving 4- to 7-inch openings or portals in the fence or the fence shall be raised 7 inches above the ground leaving a gap between the fence mesh and the ground. In the latter case the bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that passes under the fence.</p> <p>MM 4.4-5: During construction and decommissioning, the Lead Biologist or approved biological monitor shall monitor all initial ground-disturbance activities and remain on-call throughout construction/decommissioning in the event a special-status species wanders into the project site.</p> <p>Preconstruction surveys for special-status species shall be conducted within the project boundaries by the Lead Biologist or approved biological monitor within 14 days of the start of any vegetation clearing or grading activities. Methodology for preconstruction surveys shall be appropriate for each potentially occurring species-status species and shall follow U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife preconstruction survey guidelines where appropriate. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. The Lead Biologist may use a variety of approaches (including but not limited to monitoring, track plates, and direct observation) and evidence (including burrow characteristics and presence of sign such as scat and tracks) to determine burrow activity. If any evidence of occupation of the project site special-status species is</p>	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>observed, a buffer shall be established by a qualified biologist that results in sufficient avoidance, as described below.</p> <p>Preconstruction surveys shall be conducted by a qualified biologist for the presence of American badger or San Joaquin kit fox dens within 14 days prior to commencement of construction activities. The surveys shall be conducted in the project site for American badger and San Joaquin kit fox. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days prior to that portion of the project site disturbed. If potential dens are observed and avoidance is feasible, the following buffer distances shall be established prior to construction activities:</p> <p>San Joaquin kit fox or American badger potential den: 50 feet.</p> <p>San Joaquin kit fox or American badger active den: 100 feet.</p> <p>San Joaquin kit fox or American badger natal den: 500 feet.</p> <p>If avoidance of the potential dens is not possible, the following measures are required to avoid potential adverse effects to the American badger and San Joaquin kit fox:</p> <ol style="list-style-type: none"> If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent American badgers or San Joaquin kit foxes from re-using them during construction. If the qualified biologist determines that potential dens may be active, an onsite passive relocation program shall be implemented. This program shall consist of excluding American badgers or San Joaquin kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for 7 days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that American badgers or San Joaquin kit foxes have stopped using the dens within the project boundary, the dens shall be 	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>hand-excavated with a shovel to prevent re-use during construction.</p> <p>During fencing and grading activities daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall activities conducted related to biological resources, including the Environmental Awareness Training and Education Program, clearance/pre-activity surveys, monitoring activities, and any observed special-status species, including injuries and fatalities. These monitoring reports shall be submitted to the Kern County Planning and Natural Resources Department and relevant resource agencies, as applicable, on a monthly basis along with copies of all survey reports.</p> <p>MM 4.4-6: Within 14 days prior to the commencement of any ground-disturbing activities, the project operator shall conduct preconstruction surveys for special-status and protected plant species within the project area, including but not limited to crownscale, Lost Hills crownscale and San Joaquin Bluecurls, San Joaquin woollythreads and California jewelflower. After the preconstruction survey determines the exact location of these species, if present, on the project site and the number of individuals or populations present, the project proponent/operator shall submit written documentation to the Kern County Planning and Natural Resources Department confirming implementation of the measures described below.</p> <p>a. The project proponent/operator shall work with a qualified biologist to determine presence of crownscale, Lost Hills crownscale and San Joaquin Bluecurls, San Joaquin woollythreads and California jewelflower and identify all known locations of special-status plant species to establish “avoidance areas”. All special-status plants found within the project site shall be avoided by a buffer of 25 feet. Sturdy,</p>	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>highly visible, orange plastic construction fencing (or equivalent material verified by the authorized biologist) shall be installed around all locations of detected special-status plants to protect from impacts during the construction phase, until they can be relocated. The fence shall be securely staked and installed in a durable manner that would be reasonably expected to withstand wind and weather events and last at least through the construction period. Fencing shall be removed upon completion of the project construction.</p> <p>b. Any crownscale, Lost Hills crownscale, San Joaquin Bluecurls, San Joaquin woollythreads orand California jewelflower Clokey’s cryptantha, Rosamond eriastrum, sagebrush loeflingia, Latimer’s woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur onsite individuals or populations that cannot feasibly be avoided in final project design shall have seed collected prior to construction for sowing into suitable onsite habitat or in nearby suitable offsite habitat covered with a conservation easement. A seed harvesting and storage plan including a planting plan shall be prepared and approved by the County, prior to ground disturbance of these areas.</p> <p>c. Temporary ground disturbance associated with the gen-tie lines or collector lines shall be recontoured to natural grade (if the grade was modified during the temporary disturbance activity), and revegetated with an application of a native seed mix prior to or during seasonal rains to promote passive restoration of the area to pre-project conditions. However, if invasive plant species were present, these species would not be restored. An area subjected to temporary ground disturbance means any area that is disturbed but will not be subjected to further disturbance as part of the project. This does not include areas already designated as urban/developed. Prior to seeding temporary ground disturbance areas, the qualified biologist will review the seeding palette to ensure that no seeding of invasive plant species, as identified in the most recent version</p>	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>of the California Invasive Plant Inventory for the region, will occur.</p> <p>MM 4.4-7: A qualified wildlife biologist shall conduct preconstruction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows no fewer than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading, tilling). The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls.. As each burrow is investigated, surveying biologists shall also look for signs of American badger and San Joaquin kit fox. Copies of the survey results shall be submitted to CDFW and the Kern County Planning and Natural Resources Department.</p> <p>If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within a buffer of no fewer than 100 meters (330 feet) from an active burrow during the breeding season (i.e., February 1 to August 31), unless otherwise authorized by CDFW. During the non-breeding (winter) season (i.e., September 1 to January 31), ground-disturbing work can proceed as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.</p> <p>If burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31) where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and</p>	

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		<p>Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation.</p> <p>If passive relocation is required, a qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and a Mitigation Land Management Plan in, accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation, for review by CDFW prior to passive relocation activities. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation. At a minimum, the following recommendations shall be implemented:</p> <ol style="list-style-type: none"> Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions including decompacting soil and revegetating. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows and burrowing owl impacted are replaced based on a site-specific analysis and shall include permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals. Permanently protect mitigation land through a conservation easement, deed restriction, or similar mechanism deeded to a nonprofit conservation organization or public agency with a conservation mission. If the project is located within the service area of a CDFW-approved burrowing owl conservation bank, the project operator may purchase available burrowing owl conservation bank credits. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the proposed project if 	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>the compensatory habitat is deemed suitable to support the species.</p> <p>MM 4.4-8: A preconstruction survey for BNLL and antelope squirrel in compliance with agency recommendations in accordance with USFWS and/or CDFW protocols shall be conducted and used to determine if there are suitable burrows for these species on the project site. The survey shall identify burrows suitable for BNLL and antelope squirrel. An agency-approved disturbance buffer shall be placed around all identified small burrows with potential to support BNLL and antelope squirrel. Avoidance of burrows and associated buffer areas shall be implemented. If BNLL and antelope squirrel is identified during the focused surveys, USFWS and CDFW shall be consulted to obtain the necessary permit authorizations before proceeding. If burrow avoidance is not possible within the project site, a Management Plan for the appropriate species will be prepared in consultation with the agencies.</p> <p>MM 4.4-9: Protocol level surveys for the BNLL shall be conducted at the project site from April to July, in suitable habitat that will be disturbed by construction, to determine the potential for occupancy by BNLL. Surveys may be conducted in areas of disturbance and needed buffers as work progresses or in stages as needed during the construction phase. If surveys indicate that BNLL and appropriate burrow habitat are absent, the construction area(s) can be fenced using materials and installing fencing in compliance with agency specifications to prevent potential future occupancy of BNLL.</p> <p>If BNLL are found within the survey areas, measures to protect the species shall include appropriate signage, monitoring by approved qualified biologists and other specific protection measures developed in compliance with agency guidelines. If burrows are found to be occupied, measures for avoidance and minimization of impact to BNLL shall be written in compliance with recommendations provided during agency consultations and shall contain project specific details. Project actions in areas where BNLL are located shall be restricted to the species active period (April to</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>early November) to ensure that no aestivating BNLL in burrows are impacted while in their burrows. In conjunction with CDFW or other involved agencies, sensitive areas shall be established and protected with appropriate signage. During the active season when blunt-nosed leopard lizards are moving above-ground (April to early November), the following measures will be implemented in areas where blunt-nosed leopard lizards or signs of blunt-nosed leopard lizards have been observed:</p> <ul style="list-style-type: none"> a. Establishment of No-Work Buffers. The project biologist will establish, monitor, and maintain 50-foot no-work buffers around burrows and egg clutch sites identified during surveys. The 50- foot no-work buffers will be established around burrows in a manner that allows for a connection between the burrow site and the suitable natural habitat adjacent to the Construction Footprint so that blunt-nosed leopard lizards and/or hatchlings may leave the area after eggs have hatched. Construction activities will not occur within the 50-foot no-work buffers until such time as the eggs have hatched and blunt-nosed leopard lizards have left the area. b. Fencing of Work Areas. Prior to installing wildlife exclusion fence (WEF), the project biologist will confirm that no blunt-nosed leopard lizard are present within a Work Area by conducting focused blunt-nosed leopard lizard observational surveys for 12 days over the course of a 30 to 60-day period. At least one survey session will occur over 4 consecutive days. These observational surveys may be paired with scent detection dog surveys for blunt-nosed leopard lizard scat. <ul style="list-style-type: none"> i. Within 3 days of completing these surveys with negative results, WEF will be installed in a configuration that accounts for burrow locations and enables blunt-nosed leopard lizards to leave the Work Area. The following day, the project biologist will conduct an observational survey. If no blunt-nosed leopard lizards are observed, the project biologist will install additional WEF to further enclose the 	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Work Area. This Work Area will be monitored daily while the WEF is in place.</p> <p>ii. If blunt-nosed leopard lizards are observed prior to installing the last of the WEF, the project biologist will continue observational surveys until the lizard is observed leaving the Work Area or until 30 days elapse with no blunt-nosed leopard lizards observations within the Work Area.</p> <p>A qualified biological monitor shall be present to ensure activities are compliant with protection measures. Ground disturbance shall be prohibited in sensitive areas, and biological monitors shall conduct regular inspections.</p> <p>MM 4.4-10: If construction is scheduled to commence during the non-nesting season (i.e., September 1 to January 31), no preconstruction surveys or additional measures are required. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site for construction activities that are initiated during the breeding season (i.e., February 1 to August 31). The raptor survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 0.5-mile buffer around the project site. Swainson's hawk nest survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 5-mile buffer around the project site and follow the 2010 Swainson's hawk protocol surveys (CEC and CDFW 2010). Surveys shall be conducted no more than 14 days prior to construction activities. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur shortly before a portion of the project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable no-disturbance buffer (e.g., 200–300 feet for common raptors; 0.5 mile for Swainson's hawk; 30–50 feet for passerine species) shall be established around active</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>nests until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). For non-listed species, encroachment into the avoidance buffer may occur at the discretion of a qualified biologist; however, for State-listed species, consultation with CDFW shall occur prior to encroachment into the aforementioned buffers.</p> <p>MM 4.4-11: The project proponent/operator shall install power lines in conformance with Avian Power Line Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), and for collision-reducing techniques as outlined in Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), or any superseding document issued by APLIC.</p> <p>MM 4.4-12: Exclusionary fencing, staking or other marking shall be installed prior to grading activities and remain in place for the duration of construction to ensure limiting disturbance to only that which is necessary.</p>	
Impact 4.4-2: The project could have a substantial adverse effect on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS.	Potentially significant	With implementation of Mitigation Measures MM 4.4-1 through 4.4-6, and MM 4.10-1 would be required (See Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation text).	Less than significant
Impact 4.4-3: The project would 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.	Less than significant	No mitigation would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Potentially significant	Implementation of Mitigation Measure MM 4.1-4 through 4.1-6 would be required (See Section 4.1, <i>Aesthetics</i> , for full mitigation text). MM 4.4-13: Movement Corridors shall be established and managed for the benefit of sensitive species movement in compliance with agency recommendations. A qualified biologist shall be involved with the design or provide approval of the plan to ensure areas to ensure wildlife movement exist within and around the project site. The use of movement corridors shall be a part of the operations plan and be ensured for the duration and perpetuity of the project.	Less than significant
Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.4-6: The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.4: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, MM 4.1-4 through MM 4.1-6, and MM 4.10-1 would be required (See Section 4.1, <i>Aesthetics</i> , Section 4.10, <i>Hydrology and Water Quality</i> for full mitigation text).	Significant and unavoidable

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.5 Cultural Resources			
Impact 4.5-1: The project would cause a substantial adverse change in the significance of a historical resource, as defined in <i>CEQA Guidelines</i> Section 15064.5.	Potentially significant	<p>MM 4.5-1: The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2011), to carry out all mitigation measures related to archaeological and historical resources. The contact information for this Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities on-site. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:</p> <ul style="list-style-type: none"> a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist, in consultation with the Native American monitor(s), shall prepare Cultural Resources Sensitivity Training materials to be used in orientation program given to all personnel working on the project. A Cultural Resources Sensitivity Training Guide approved by the Lead Archaeologist shall be provided to all personnel. A copy of the Cultural Resources Sensitivity Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. A copy of the proposed training materials shall be provided to the Planning and Natural Resources Department prior to the issuance of any grading or building permit. b. The project proponent/operator shall ensure all new employees or onsite workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet provisions specified above. c. The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist for further evaluation and action, as appropriate; and penalties 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>for unauthorized artifact collecting or intentional disturbance of archaeological resources.</p> <p>d. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept on-site and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Lead Archaeologist to ensure all employees receive appropriate training before commencing work on-site.</p> <p>e. During implementation of the project, the services of Native American tribal monitors, as identified through consultation with appropriate Native American tribes, working under the supervision of the Lead Archaeologist, shall be retained by the project to monitor project-related construction activities.</p> <p>MM 4.5-2: During implementation of the project, in the event that archaeological materials are encountered during the course of grading or construction, the project contractor shall cease any ground-disturbing activities within 50 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of the discovery. Signs shall be posted that establish it as an Environmentally Sensitive Area, and all entrance into the area shall be avoided until the discovery is assessed by the lead archaeologist and any Native American representatives affiliated with the project vicinity. The lead archaeologist, in consultation with any Native American representatives, shall evaluate the significance of the resources and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act (CEQA) Guidelines Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources.</p> <p>Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the lead</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		archaeologist, in consultation with any Native American representatives, shall develop additional treatment measures in consultation with the County of Kern (County), which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Diagnostic archaeological materials with research potential recovered during any investigation shall be curated at an accredited curation facility. The lead archaeologist, in consultation with a designated Native American monitor, shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.	
Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to <i>CEQA Guidelines</i> Section 15064.5.	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2 would be required.	Less than significant
Impact 4.5-3: The project would disturb human remains, including those interred outside of formal cemeteries.	Potentially significant	<p>MM 4.5-3: During implementation of the project, the services of an Archaeological and Native American Tribal Monitors, shall be retained by the project proponent/operator to monitor, on a full-time basis, ground-disturbing activities associated with project-related construction activities, as follows:</p> <ul style="list-style-type: none"> a. All initial ground-disturbing activities, shall be monitored by Native American Tribal Monitors and Archaeological monitors. b. During implementation of the project, Archaeological and Native American monitoring shall be conducted for all excavation or grading activities. If no archaeological discoveries are made during the course of this monitoring, no additional monitoring will be required. If the qualified 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>archaeologist can demonstrate a need for continuing monitoring, the qualified archaeologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances as warranted.</p> <p>c. For all other ground-disturbing activities within the project area, initial excavation or ground-disturbing activities shall be monitored by Archaeological and Native American monitors. During the course of this initial monitoring, if the Lead Archaeologist can demonstrate that the level of monitoring should be reduced or discontinued, or if the Lead Archaeologist can demonstrate a need for continuing monitoring, the Lead Archaeologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances as warranted.</p> <p>d. The Archaeological monitors and Native American monitors shall work under the supervision of the Lead Archaeologist. The Lead Archaeologist, Archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. Should the services of any additional individuals be retained (as the Lead Archaeologist or, Archaeological monitor, or Native American monitor) subsequent to commencement of ground disturbing activities, such individuals shall be provided all proposed project documentation related to cultural resources within the project area, prior to beginning work. Documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the Lead Archaeologist, and Archaeological monitor, and Native American monitor.</p> <p>e. The Archaeological monitor shall keep daily logs and the Lead Archaeologist shall submit monthly written updates to the</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department, and to the southern San Joaquin Valley Information Center at California State University, Bakersfield</p> <p>MM 4.5-4: If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in of the California Environmental Quality Act Guidelines Section 15064.4(e)(1). If the County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code (PRC) Section 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per PRC Section 5097.98. Per PRC Section 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (Section 7100 et. seq.) directing identification of the next-of-kin will apply.</p>	
Impact 4.5: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.6 Energy			
Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Potentially significant	Implementation of Mitigation Measure MM 4.3-1 (see Section 4.3, <i>Air Quality</i> , of this EIR, for full mitigation measure text).	Less than significant
Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.6: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.3-1 would be required (see Section 4.3, <i>Air Quality</i> , of this EIR, for full mitigation measure text).	Less than significant
4.7 Geology and Soils			
Impact 4.7-1: The project 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.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death	Potentially significant	MM 4.7-1: Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a final engineering design specific geotechnical study to evaluate soil conditions and	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
involving: strong seismic ground shaking.		<p>geologic hazards on the project site and submit it to the Kern County Public Works Department for review and approval.</p> <p>a. The final geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following:</p> <ul style="list-style-type: none"> i. Location of fault traces and potential for surface rupture and groundshaking potential; ii. Maximum considered earthquake and associated ground acceleration for design; iii. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils; iv. Stability of any existing or proposed cut-and-fill slopes; v. Collapsible or expansive soils; vi. Foundation material type; vii. Potential for wind erosion, water erosion, sedimentation, and flooding; viii. Location and description of unprotected drainage that could be impacted by the proposed development; and, ix. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground. <p>b. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent shall not locate project facilities on or immediately adjacent to an active fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid sighting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed.</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		c. The final geotechnical report shall be submitted for review and approval by the Kern County Public Works Department. The Kern County Public Works Department shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided. Final design requirements shall also be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department.	
Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: seismic-related ground failure including liquefaction.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.7-4: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: landslides.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.7-5: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: substantial soil erosion or the loss of topsoil.	Potentially significant	Implement Mitigation Measures MM 4.7-1 and MM 4.10-1 (see Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, for full mitigation measure text).	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.7-6: The project would 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.	Potentially significant	Implementation of Mitigation Measure MM 4.7-1 would be required.	Less than significant
Impact 4.7-7: The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Potentially significant	Implementation of Mitigation Measure MM 4.7-1 would be required.	Less than significant
Impact 4.7-8: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially significant	<p>MM 4.7-2: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (SVP, 2010), to carry out all mitigation measures related to paleontological resources.</p> <p>a. Prior to the start of any ground disturbing activities, the qualified paleontologist shall conduct a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources</p>	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Department. The training guide may be presented in video form.</p> <p>b. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements.</p> <p>c. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.</p> <p>d. The project operator shall ensure all new employees who have not participated in earlier Paleontological Resources Sensitivity Trainings shall meet the provisions specified above.</p> <p>e. The Paleontological Resources Awareness Training Guides shall be kept available for all personnel to review and be familiar with as necessary.</p> <p>MM 4.7-43: If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.7: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1 would be required (see Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, for full mitigation measure text).	Less than significant
4.8 Greenhouse Gas Emissions			
Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than significant	Implement Mitigation Measures MM 4.3-1 through MM 4.3-5 would be required (see Section 4.3, <i>Air Quality</i> , of this EIR, for full mitigation measure text). .	Less than significant
Impact 4.8-2: The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.8: Cumulative Impacts	Less than significant	No mitigation would be required.	Less than significant
4.9 Hazards and Hazardous Materials			
Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially significant	MM 4.9-1: During the life of the project, including decommissioning, the project operator shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System (CERS) at http://cers.calepa.ca.gov/ for review and acceptance by the Kern County Environmental Health Services Division/Hazardous Materials Section. The HMBP shall: <ul style="list-style-type: none"> a. Delineate hazardous material and hazardous waste storage areas b. Describe proper handling, storage, transport, and disposal techniques 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>c. Describe methods to be used to avoid spills and minimize impacts in the event of a spill</p> <p>d. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation</p> <p>e. Establish public and agency notification procedures for spills and other emergencies including fires</p> <p>f. Describe federal, state, or local agency coordination, as applicable, and clean-up efforts that would occur in the event of an accidental release.</p> <p>g. Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site</p> <p>The project proponent shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.</p> <p>MM 4.9-2: The impacted soil area near the eastern boundary of the site with impacted soil which served as a land farm and its associated settling pond shall be avoided in its entirety during construction, operation, and decommissioning activities.</p>	
Impact 4.9-2: The project would 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.	Potentially significant	<p>Implementation of Mitigation Measures MM 4.9-1, MM 4.9-2 and MM 4.17-1 would be required (see Section 4.17, <i>Utilities and System Services</i>, for full mitigation measure text).</p> <p>MM 4.9-3: The project proponent/operator shall continuously comply with the following:</p> <p>a. The construction contractor or project personnel shall use herbicides that are approved for use in California, and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all appropriate State and local herbicide applicator licenses</p>	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>and comply with all State and local regulations regarding herbicide use.</p> <p>b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.</p> <p>c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.</p> <p>d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water.</p> <p>e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated.</p> <p>f. A written record of all herbicide applications on the site, including dates and amounts, shall be furnished annually to the Kern County Planning and Natural Resources Department.</p>	
Impact 4.9-3: The project would emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	No impact	No mitigation would be required.	No impact

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.9-4: The project would 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, would create a significant hazard to the public or the environment.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.9-5: The project would result in a safety hazard or excessive noise for people residing or working in the project area, for a project located within the adopted Kern County Airport Land Use Plan.	No impact	No mitigation would be required.	No impact
Impact 4.9-6: The project would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.	No impact	No mitigation would be required.	No impact
Impact 4.9-7: The project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	Potentially significant	Implement Mitigation Measure MM 4.14-1 (see Section 4.14-1, Public Services, for full text).	Less than significant
Impact 4.9-8: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, would the proposed project exceed the following	Less than significant	No mitigation would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<p>qualitative threshold: the presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the proposed project is significant when the applicable enforcement agency determines that any of the vectors:</p> <p>i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; or</p> <p>ii. Are associated with design, layout, and management of proposed project operations; or</p> <p>iii. Disseminate widely from the property; or</p> <p>iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.</p>			
Impact 4.9: Cumulative Impacts	Potentially significant	Implement of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, and MM 4.17-1 (see Sections 4.14-1, Public Services, and 4.17, Utilities and System Services, for full text).	Less than significant
4.10 Hydrology and Water Quality			
Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise degrade surface or groundwater water quality.	Potentially significant	<p>Implementation of Mitigation Measure MM 4.9-1 would be required (see Section 4.9, <i>Hazards and Hazardous Materials</i>, for full mitigation measure text).</p> <p>MM 4.10-1: Prior to issuance of a grading permit, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan (SWPPP) for review and approval by the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department. The SWPPP shall be designed</p>	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving offsite and into receiving waters. The requirements of the SWPPP shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the SWPPP may include the following:</p> <ul style="list-style-type: none"> a. Minimization of vegetation removal; b. Implementing sediment controls, including silt fences a necessary; c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas; d. Properly containing and disposing of hazardous materials used for construction onsite; e. Properly covering stockpiled soils to prevent wind erosion; f. Proper protections and containment for fueling and maintenance of equipment and vehicles; and g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter. h. Cleanup of silt and mud on adjacent street due to construction activity. i. Checking all lined and unlined ditches after each rainfall. j. Restore all erosion control devices to working order to the satisfaction of the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department after each rainfall run-off. k. Install additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise. <p>MM 4.10-2: Prior to the issuance of a grading permit, the project proponent/operator shall complete a hydrologic study and final drainage plan designed to evaluate and minimize potential</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>increases in runoff from the project site. The study shall include, but is not limited to the following:</p> <ul style="list-style-type: none"> a. A numerical stormwater model for the project site that evaluates existing and proposed (with project) drainage conditions during storm events ranging up to the 100-year event. b. The study shall also consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation. c. Engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite. d. A specification that the final design of the solar arrays shall include one foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be graded to direct potential flood waters without increasing the water surface elevations more than one foot or as required by Kern County's Floodplain Management Ordinance. e. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards, and approved by the Kern County Public Works Department prior to the issuance of grading permits. 	
Impact 4.10-2: The project would substantially decrease groundwater supplies or interfere substantially	Less than significant	Implementation of Mitigation Measure MM 4.10-1 would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
with groundwater recharge such that the project may impede sustainable groundwater management of the basin.			
Impact 4.10-3: The project would substantially alter the existing drainage patterns 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 that would result in substantial erosion and/or sedimentation on-site or off-site.	Potentially significant	Implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2 would be required.	Less than significant
Impact 4.10-4: The project would substantially alter the existing drainage patterns 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 that would substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant
Impact 4.10-5: The project would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant
Impact 4.10-7: The project would result in a flood hazard, tsunami, or seiche zone, that would risk release of pollutants due to project inundation.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant
Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	No impact	No mitigation would be required.	Less than significant
Impact 4.10: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.9-1, MM 4.10-1 and MM 4.10-2 would be required (See Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text).	Less than significant
4.11 Land Use			
Impact 4.11-1: The project would cause a significant environmental impact due to physically dividing an established community.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.11-2: The project would 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.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.11: Cumulative Impacts	Potentially significant	MM 4.11-1: Prior to issuance of any building permit, the project operator shall provide a Decommission Plan for review and approval by the Kern County Public Works Department or a	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>County-contracted consulting firm at a cost to be borne by the project operator. The Decommission Plan shall factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from removal of support structures, and control of fugitive dust on the remaining undeveloped land. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. The assumption, when preparing the estimate, is that the project operator is incapable of performing the work or has abandoned the solar facility, thereby requiring Kern County to hire an independent contractor to perform the decommissioning work. In addition to submitting a Decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the decommissioning of the site as identified on the approved Decommission Plan in the event that at any point in time the project operator determines it is not in the company's best interest to operate the facility.</p> <p>The financial assurance required prior to issuance of any building permit shall be established using one of the following:</p> <ul style="list-style-type: none"> a. An irrevocable letter of credit; b. A surety bond; c. A trust fund in accordance with the approved financial assurances to guarantee the decommissioning work will be completed in accordance with the approved decommission plan; or d. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department. <p>The financial institution or Surety Company shall give the County at least 180 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed annually by the Kern County Public Works Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate those adequate funds exist to ensure decommissioning of all solar panels and support structures identified on the approved</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>Decommission Plan. Should the project operator decommission the site on their own, the County will not pursue forfeiture of the financial assurance.</p> <p>Once decommissioning has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by the County shall be returned to the project operator.</p> <p>Should any portion of the solar field not be in operational condition for a consecutive period of twelve 12 months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project operator may provide the director of the Kern County Planning and Natural Resources Department a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Director shall consider any such request at a Director's Hearing as provided for in Section 19.102.070 of the Kern County Zoning Ordinance. In no case shall a solar field that has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date, the solar facility was first deemed abandoned.</p>	

4.12 Mineral Resources

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.12-1: The project would 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.	Less than significant	<p>MM 4.12-1: Prior to issuance of any grading or building permit, excluding the generation tie line in, the project proponent shall provide the following documentation regarding the mineral rights holders who also have right of surface access and drilling areas:</p> <ul style="list-style-type: none"> a. A site plan showing the unbuildable drilling areas provided for the mineral holders with clear notation that no use of the area can be made for the life of the project except for exploration and extraction of oil and gas with permits without purchase and ownership of full mineral rights. No construction storage or laydown area may be established at any time in the drilling areas unless permitted through an individual agreement. All drilling areas shall be fenced and provided legal access across the site, and a 40-foot-long gate provided or as detailed by the individual agreement including a provision to not fence the drill island; or b. For all mineral rights holders that do not have an individual agreement and have right of surface access, a drilling area sufficient to provide access to their minerals shall be shown on the final site plan and acknowledged in all grading plans: 	Less than significant
Impact 4.12-2: The project would 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.	Less than significant	Implementation of Mitigation Measure MM 4.12-1 would be required.	Less than significant
Impact 4.12: Cumulative Impacts	Less than significant	Implementation of Mitigation Measure MM 4.12-1 would be required	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.13 Noise			
Impact 4.13-1: The project would result in generation of a substantial temporary or permanent increase in the 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.	Potentially significant	<p>MM 4.13-1: The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning:</p> <ul style="list-style-type: none"> a. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and between 9:00 p.m. to 8:00 a.m. on weekends. These hourly limitations shall not apply to activities where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols. b. Equipment staging and laydown areas shall be located at the furthest practical distance from nearby residential land uses. To the extent possible, staging and laydown areas should be located at least 500 feet of existing residential dwellings. c. Construction equipment shall be fitted with noise-reduction features such as mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer. d. Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing). e. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency). f. Back-up beepers for all construction equipment and vehicles shall be broadband sound alarms or adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>violated. On vehicles where back-up beepers are not available, alternative safety measures such as escorts and spotters shall be employed.</p> <p>MM 4.13-2: Prior to the issuance of grading permits, a “noise disturbance coordinator” shall be established. The project operator shall submit evidence of methods of implementation and shall continuously comply with the following during construction: The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved</p> <p>MM 4.13-3: Prior to the issuance of grading permits, the project operator shall submit evidence of the following: Construction contracts shall specify that notices shall be sent out to all residences within 1,000 feet of the construction areas at least 15 days prior to commencement of construction. The notices shall include the construction’s schedule and a telephone number where complaints can be registered with the noise disturbance coordinator. A sign legible at a distance of 50 feet shall also be posted at the construction site throughout construction, which includes the same details as the notices.</p>	
Impact 4.13-2: The project would generate excessive groundborne vibration or groundborne noise levels.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.13-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than significant	No mitigation would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.13-4: The project is not located within the Kern County Airport Land Use Compatibility Plan and would not expose people residing or working in the area to excessive noise levels.	Less than significant	No mitigation would be required.	No impact
Impact 4.13: Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.13-1 through MM 4.13-3 to reduce and minimize cumulative construction noise and vibration levels.	Less than significant
4.14 Public Services			
Impact 4.14-1: The project would result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services or police protection services.	Potentially significant	<p>MM 4.14-1: Prior to the issuance of grading or building permits the project proponent/operator shall develop and implement a fire safety plan for use during construction, operation and decommissioning.</p> <p>The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:</p> <ul style="list-style-type: none"> a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order. b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition. c. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees. d. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials. 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>e. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.</p> <p>f. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.</p> <p>MM 4.14-2: The following Cumulative Impact Charge (CIC) shall be implemented as payment on approved Conditional Use Permit acreage.</p> <p>a. Submittal of Building Permit and Phasing</p> <p>i. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification.</p> <p>ii. The map for either the total project or a phase shall calculate the Cumulative Impact Charge (CIC) net acreage as follows:</p> <p>a) Total gross acreage (Phase)</p> <p>b) Total acres for Operations and Maintenance building permanent accessory improvements</p> <p>c) Total acres for Energy Storage structure and permanent accessory improvements</p> <p>d) Total acres of recorded easements</p> <p>iii. Formula: Net Acreage = (ii)a minus the sum of [(ii)b + (ii)c + (ii)d].</p> <p>iv. Temporary storage areas or non-permanent commercial coaches or cargo containers for construction or operations are not eligible for inclusion under (ii)b or (ii)c, above.</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>v. All areas of buildings, accessory improvements and easement used in the calculations shall be shown on the submitted Phase Map.</p> <p>vi. Any property included in the approved Conditional Use Permit that is not included in a phase must be included in the last phase or a formal modification processed to remove it from the Conditional Use Permit.</p> <p>b. Calculation and Payment of Cumulative Impact Charge (CIC)</p> <p>i. A payment of \$620 per net acre for the map shown with the building permit submittal shall be paid upon issuance of the first building permit. If it is not paid within 30 days after the issuance of the first building permit for the phase regardless of the total number of building permits or type of building permit issued, all such permits shall be suspended until the fee is paid in full.</p> <p>ii. Payments shall be made to the Planning and Natural Resources Department for transfer directly to the County Administrative Office Fiscal Division (CAO) and labeled Cumulative Impact Charge (CIC) with the project name and phase number.</p> <p>iii. Any acres denoted for an operation and maintenance building or energy storage that are not built, cannot be used for solar panels unless payment is provided for the Cumulative Impact Charge (CIC)</p> <p>MM 4.14-3: Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation. The fee shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year.</p> <p>MM 4.14-4: The project proponent/operator shall work with the County to determine how the use of sales and use taxes from</p>	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<p>construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.</p> <p>MM 4.14-5: Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.</p>	
Impact 4.14: Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.14-1 through MM 4.14-5.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.15 Transportation and Traffic			
Impact 4.15-1: The project would conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows: Metropolitan Bakersfield General Plan LOS C and Kern County General Plan LOS “D.”	Less than significant	<p>MM 4.15-1: Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall implement measures to ensure peak hour construction worker vehicle limits are maintained during the AM and PM peak hours in order to maintain LOS D or better at the study intersections. These measures may include, but are not limited to the following:</p> <ul style="list-style-type: none"> a. The Construction Traffic Control Plan (see MM 4.15-2, below) shall outline the methods used to count worker vehicle traffic arriving and departing from the project site during peak AM and PM hours, methods used to control the number of trips during these hours, and documentation of reasonable coordination efforts with other projects in the area to avoid impacts to study intersections. The Construction Traffic Control Plan shall outline methods to limit construction related traffic trips to 150 trips per day or less on unpaved roads per the standards of the San Joaquin Valley Air Pollution Control District. b. The project proponent/operator shall limit construction worker vehicle trips to and from the site to the extent possible during the AM and PM peak periods (i.e., 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.). c. If monitoring indicates that either AM or PM peak hour construction trips may exceed the peak hour construction worker vehicle limits, the project proponent/operator shall implement measures to reduce peak hour passenger vehicle trips. These measures could include: <ul style="list-style-type: none"> i. Scheduling construction worker shifts so that a majority of the workers arrive and depart the project site outside the AM and PM peak periods. ii. Staggering construction worker shifts so that construction worker vehicle trips are distributed over a broader period (i.e., construction workers arrive in staggered shifts starting 	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		from 6:00 a.m. and depart in staggered shifts starting from 2:00 p.m.).	
		iii. Instituting incentives and providing options for construction workers to carpool and/or vanpool to and from the project site.	
		MM 4.15-2: Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall:	
		a. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 6, as appropriate, for approval. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following issues:	
		i. Timing of deliveries of heavy equipment and building materials. To the extent feasible, restrict deliveries and vendor vehicle arrivals and departures during either the AM and PM peak periods;	
		ii. Directing construction traffic with flaggers along the project construction corridor;	
		iii. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;	
		iv. Ensuring access for emergency vehicles to the project sites;	
		v. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;	
		vi. Maintaining access to adjacent property;	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul style="list-style-type: none"> vii. Specifying both construction-related vehicle travel and oversize load haul routes and avoiding residential neighborhoods to the maximum extent feasible; and viii. Consult with the County to develop coordinated plans that would address construction-related vehicle routing and detours adjacent to the construction area for the duration of construction overlap with neighboring projects. Key coordination meetings would be held jointly between applicants and contractors of other projects for which the County determines impacts could overlap. b. Obtain all necessary encroachment permits for the work within the road right-of-way or use of oversized/overweight vehicles that will utilize county maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department, the Kern County Public Works Department-Development Review, and Caltrans. c. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County. d. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-county maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department-Development Review and the Kern County Planning and Natural Resources Department. e. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log 	

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.	
Impact 4.15-2: The project would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards developed by the county congestion management agency for designated roads or highways.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.15-3: The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less than significant	No mitigation would be required.	Less than significant
Impact 4.15-4: The project would result in inadequate emergency access.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.15: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 and MM 4.15-2 would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.16 Tribal Cultural Resources			
Impact 4.16-1a: The project would 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 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).	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (See Section 4.5, <i>Cultural Resources</i> , for full mitigation measure text).	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.16-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources 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 that is 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.	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (See Section 4.5, Cultural Resources, for full mitigation measure text).	Less than significant
Impact 4.16: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (See Section 4.5, Cultural Resources, for full mitigation measure text).	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.17 Utilities and Service Systems			
Impact 4.17-1: The project would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	Potentially significant	Implementation of Mitigation Measures MM 4.10-1 would be required (See Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text).	Less than significant
Impact 4.17-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.17-3: The project would result in a determination by the waste water treatment provider which may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than significant	No mitigation would be required.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.17-4: The project would 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.	Potentially significant	<p>MM 4.17-1: During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. The provisions listed below shall apply to the project.</p> <ul style="list-style-type: none"> a. An onsite Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance and Decommissioning, Trash Abatement and Pest Management Program. b. The Recycling Coordinator shall facilitate recycling of all construction waste through coordination with contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. c. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal d. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site. 	Less than significant
Impact 4.17-5: The project would comply with Federal, State, and Local management and reduction statutes and regulations related to solid waste.	Potentially significant	Implementation of Mitigation Measure MM 4.17-1	Less than significant
Impact 4.17: Cumulative Impacts	Potentially significant	Implement Mitigation Measures MM 4.10 1 and MM 4.17 1.	Less than significant

TABLE 1-7: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.18 Wildfire			
Impact 4.18-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.	No impact	No mitigation would be required.	No impact
Impact 4.18-2: The project would, 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.	No impact	No mitigation would be required.	No impact
Impact 4.18-3: The project would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	Potentially significant	Implementation of Mitigation Measure MM 4.14-1 would be required (See Section 4.14, <i>Public Services</i> , for full mitigation measure text).	Less than significant
Impact 4.18-4: The project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 would be required (See Section 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text).	Less than significant
Impact 4.18: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1 would be required (See Section 4.10, <i>Hydrology and Water Quality</i> , and Section 4.14, <i>Public Services</i> , for full mitigation measure text).	Significant and unavoidable

Chapter 2 Introduction

2.1 Intent of the California Environmental Quality Act

The Kern County Planning and Natural Resources Department, as lead agency, has determined that an Environmental Impact Report (EIR) must be prepared for the proposed Azalea Solar Project (project). The project proposes to develop a photovoltaic (PV) solar facility (Azalea Solar Facility) and associated infrastructure within approximately 340-acres of the overall 640-acre project site. The project site consists of two assessor parcels (APN# 043-210-17 which is 480 acres) and APN# 043-210-018 (which is 160 acres). Within the 480-acre parcel, approximately 267 acres would enclose approximately 231 acres used for solar power generation and associated infrastructure and within the 160-acre parcel, approximately 65 acres would be fenced and approximate 53 acres would be used solar power generation and infrastructure. The project would generate a combined total of 60 megawatts (MW) of renewable electrical energy and a Battery Energy Storage System (BESS) capable of storing approximately 55 MW of energy. The energy storage system could be charged by energy generated by the solar panels, and/or it could be charged by energy from the electrical grid. Power generated by the project would typically be transferred via proposed collection lines to the Arco Substation.

This EIR has been prepared pursuant to the following:

- The California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.)
- *CEQA Guidelines* (California Code of Regulations, Title 14, Chapter 3, Section 15000 et seq.)
- The Kern County CEQA Implementation Document

The overall purposes of the CEQA process are to:

- Ensure that the environment and public health and safety are protected in the face of discretionary projects initiated by public agencies or private concerns.
- Provide for full disclosure of the project's environmental effects to the public, the agency decision-makers who will approve or deny the project, and responsible and trustee agencies charged with managing resources (e.g., wildlife, air quality) that may be affected by the project.
- Provide a forum for public participation in the decision-making process with respect to environmental effects.

2.2 Purpose of this Environmental Impact Report

An EIR is a public informational document used in the planning and decision-making process. This project-level EIR will analyze the environmental impacts of the project. The Kern County Planning Commission and Board of Supervisors will consider the information in the EIR, including the public comments and staff response to those comments, during the public hearing process. The final decision is made by the Board of

Supervisors, who may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify:

- The significant potential impacts of the project on the environment and indicate the manner in which those significant impacts can be avoided or mitigated;
- Any unavoidable adverse impacts that cannot be mitigated; and
- Reasonable and feasible alternatives to the project that would eliminate any significant adverse environmental impacts or reduce the impacts to a less-than-significant level.

An EIR also discloses growth-inducing impacts; impacts found not to be significant; and significant cumulative impacts of the project when taken into consideration with past, present, and reasonably anticipated future projects.

CEQA requires that an EIR reflect the independent judgment of the lead agency regarding the impacts, the level of significance of the impacts both before and after mitigation, and mitigation measures proposed to reduce the impacts. A Draft EIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The purposes of public and agency review of a Draft EIR include sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting mitigation measures and alternatives capable of avoiding or reducing the significant effects of the project, while still attaining most of the basic objectives of the project.

2.2.1 Issues to Be Resolved

CEQA Guidelines Section 15123(b)(3) requires that an EIR contain issues to be resolved, which includes the choices among alternatives and whether or how to mitigate significant impacts. The following major issues are to be resolved regarding the project:

- Determine whether the Draft EIR adequately describes the environmental impacts of the project;
- Preferred choice among alternatives;
- Determine whether the recommended mitigation measures should be adopted or modified, and
- Determine whether additional mitigation measures need to be applied to the project.

2.3 Terminology

To assist reviewers in understanding this EIR, the following terms are defined:

- *Project* means the whole of an action that has the potential for resulting in a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.
- *Environment* refers to the physical conditions that exist in the area and that would be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is where significant direct or indirect impacts would occur as a result of the project. The environment includes both natural and man-made (artificial) conditions.

- *Impacts* analyzed under CEQA must be related to a physical change. Impacts are:
 - Direct or primary impacts that would be caused by the project and would occur at the same time and place; or
 - Indirect or secondary impacts that would be caused by the project and would be later in time or farther removed in distance, but would still be reasonably foreseeable. Indirect or secondary impacts may include growth-inducing impacts and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air and water and other natural systems, including ecosystems.
- *Significant impact on the environment* means a substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. An economic or social change by itself is not considered a significant impact on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
- *Mitigation* consists of measures that avoid or substantially reduce the project's significant environmental impacts by:
 - Avoiding the impact altogether by not taking a certain action or parts of an action;
 - Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
 - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
 - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
 - Compensating for the impact by replacing or providing substitute resources or environments.
- *Cumulative impacts* are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The following statements also apply when considering cumulative impacts:
 - The individual impacts may be changes resulting from a single project or separate projects.
 - The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over time.

This EIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows:

- *Less than significant.* An impact that is adverse but that does not exceed the defined thresholds of significance. Less than significant impacts do not require mitigation.
- *Significant.* An impact that exceeds the defined thresholds of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate the impact or reduce it to a less than significant level.

- *Significant and unavoidable.* An impact that exceeds the defined thresholds of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.

2.4 Decision-Making Process

CEQA requires lead agencies, in this case the Kern County Planning and Natural Resources Department, to solicit and consider input from other interested agencies, citizen groups, and individual members of the public. CEQA also requires the project to be monitored after it has been permitted to ensure that mitigation measures are carried out.

CEQA requires the lead agency to provide the public with a full disclosure of the expected environmental consequences of the project and with an opportunity to provide comments. In accordance with CEQA, the following steps constitute the process for public participation in the decision-making process:

- **Notice of Preparation/Initial Study (NOP/IS).** Kern County prepared and circulated a NOP/IS for 30 days to responsible, trustee, and local agencies for review and comment beginning on September 30, 2021, to November 1, 2021.
- **Draft EIR Preparation/Notice of Completion (NOC).** A Draft EIR is prepared, incorporating public and agency responses to the NOP/IS and the scoping process. The Draft EIR is circulated for review and comment to appropriate agencies and additional individuals and interest groups who have requested to be notified of EIR projects. Per Section 15105 of the *CEQA Guidelines*, Kern County will provide for a 45-day public review period on the Draft EIR. Kern County will subsequently respond to each comment on the Draft EIR received in writing through a Response to Comments chapter in the Final EIR. The Response to Comments will be provided to each agency or person who provided written comments on the EIR a minimum of 10 business days before the scheduled Planning Commission hearing on the Final EIR and project.
- **Preparation and Certification of Final EIR.** The Kern County Planning Commission will consider the Final EIR and the project, acting in an advisory capacity to the Kern County Board of Supervisors. Upon receipt of the Planning Commission's recommendation, the Board of Supervisors will also consider the Final EIR, all public comments, and the project, and take final action on the project. At least one public hearing will be held by both the Planning Commission and Board of Supervisors to consider the Final EIR, take public testimony, and then approve, conditionally approve, or deny the project.

2.4.1 Notice of Preparation/Initial Study

Pursuant to Section 15082 of the *CEQA Guidelines*, as amended, the Kern County Planning and Natural Resources Department circulated an NOP/IS to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning September 30, 2021, to November 1, 2021. The NOP/IS was also posted in the Kern County Clerk's office for 30 days and sent to the State Clearinghouse at the Governor's Office of Planning and Research to solicit Statewide agency participation in determining the scope of the EIR.

The purpose of the NOP/IS is to formally convey that the Kern County Planning and Natural Resources Department, as the lead agency, solicited input regarding the scope and proposed content of the EIR. The NOP/IS and all comment letters are provided in Appendix A of this EIR.

2.4.2 Scoping Meeting

Pursuant to Section 15082 (c)(1) of the *CEQA Guidelines*, for projects of statewide, regional, or area-wide significance, the lead agency is required to conduct at least one scoping meeting. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. Kern County hosted a scoping meeting on October 21, 2021, at the Kern County Planning and Natural Resources Department, located at 2700 “M” Street, Suite 100, Bakersfield, California.

Notice of Preparation/Initial Study and Scoping Meeting Results

During the October 21, 2021 scoping meeting, no members of the public were present and no testimony was given. Furthermore, specific environmental concerns raised in written comments received during the NOP/IS public review period are discussed below. The NOP/IS and all comments received are included in Appendix A, along with the Summary of Proceedings from the Scoping Meeting.

IS/NOP Written Comments

The following specific environmental concerns listed in **Table 2-1: Summary of NOP/IS Comments**, were received in writing by the County in response to the IS/NOP.

TABLE 2-1: SUMMARY OF IS/NOP COMMENTS

Commenter/Date	Summary of Comment
State Agencies	
California Department of Fish and Wildlife December 6, 2021	<p>The commenter makes the following statements and comments regarding the NOP and contents of the EIR</p> <ul style="list-style-type: none"> • CDFW is a Trustee Agency for fish and wildlife resources pursuant to Fish & Game Code § 711.7, subdivision (a) & 1802, Public Resources Code (PRC) § 21070, and CEQA Guidelines § 15386. • CDFW also is a Responsible Agency under PRC § 21069 and CEQA Guidelines § 15381. • CDFW notes that other rare species, nesting birds, should be considered and it has jurisdiction over such species and their protection. • CDFW notes the project is in the geographic range of the blunt-nosed leopard lizard (<i>Gambelia sila</i>), giant kangaroo rat (<i>Dipodomys ingens</i>), San Joaquin kit fox (<i>Vulpes macrotis mutica</i>); Swainson’s hawk (<i>Buteo swainsoni</i>), San Joaquin/Nelson’s antelope squirrel (<i>Ammospermophilus nelsoni</i>)l California jewelflower (<i>Caulanthus californicus</i>); San Joaquin woollythreads (<i>Monolopia congdonii</i>); American badger (<i>Taxidea taxus</i>)l short-nosed kangaroo rat (<i>dipodomys nitratooides brevinasus</i>); burrowing owl (<i>Athene cunicularia</i>), and western spadefoot (<i>Spea hammondi</i>). <ul style="list-style-type: none"> ○ Regarding the listed species, CDFW provides additional details regarding specific issues involving the species, specific impacts, evidence of significance, and recommended mitigation measures. • CDFW comments regarding the potential for consultation with USFWS regarding the listed species, the potential for a lake and streambed alteration agreement; nesting birds, and baseline and preconstruction surveys. • Lastly, CDFW discusses CEQA requirements and the CNDDD and payment of filing fees.

TABLE 2-1: SUMMARY OF IS/NOP COMMENTS

Commenter/Date	Summary of Comment
Local	
Kern County Superintendent of Schools October 15, 2021	The commenter states that the proposed project will have no significant effects on the Lost Hills Union and/or Wasco Union High School Districts' facilities. The commenter also states that mitigation of the project's impacts will be limited by the collection of statutory fees authorized under Education Code Section 17620 and Government Code Sections 65995 et seq.
Kern County Public Health Services Department October 29, 2021	The commenter requests that the project proponent create and account in the California Environmental Reporting System (CERS). The commenter also states that the method of water supply and sewage disposal for the proposed project shall be approved by Kern County Environmental Health Division and that if any abandoned wells are found during the grading and construction process, the applicant shall contact the Land and Water Division for permitting and destruction procedures.
Interested Parties	
SoCalGas October 11, 2021	The commenter states that the Transmission Department of SoCalGas does not operate any facilities within boundaries of the proposed project. The commenter states that, the Distribution Department of SoCalGas may maintain and operate facilities within the project scope and states that they should be contacted to make sure there are no conflicts.
Kern Audubon Society October 27, 2022	The commenter states that project site is located in a portion of Kern County containing undeveloped areas that have potential to support San Joaquin kit fox, Blunt-nosed leopard lizard, American badger, San Joaquin antelope squirrel, Tipton kangaroo rat, Giant kangaroo rat, Western burrowing owl, Swainson's hawk, and loggerhead shrike. Additionally, the commenter states that a biological site evaluation should be performed by qualified biological consultants using the appropriate survey protocols as established by both state and federal wildlife agencies and that all biological surveys be performed during the appropriate time of year to discern species presence for this eco-region.

2.4.3 Availability of the Draft EIR

This Draft EIR is being distributed directly to agencies, organizations, and interested groups and persons for comment during a 45-day formal review period in accordance with Section 15087 of the *CEQA Guidelines*. This Draft EIR and the full administrative record for the project, including all studies, is available for review during normal business hours Monday through Friday at the Kern County Planning Department, located at:

Kern County Planning and Natural Resources Department

2700 "M" Street, Suite 100

Bakersfield, CA 93301-2370

Phone: (661) 862-8600, Fax: (661) 862-8601

This EIR is also available on the Kern County Planning and Natural Resources Department website: <https://kernplanning.com/planning/environmental-documents/>.

Additionally, this EIR is available at the following libraries:

Kern County Library/Beale

Local History Room
701 Truxtun Avenue
Bakersfield, CA 93301

Kern County Library

Wasco Branch Library
1102 7th Street,
Wasco, CA 93560

2.5 Format and Content

This EIR addresses the potential environmental effects of the project and was prepared following input from the public and responsible and affected agencies, and through the EIR scoping process, as discussed previously. The contents of this EIR were based on the findings in the IS/NOP, and public and agency input. Based on the findings of the IS/NOP, a determination was made that an EIR was required to evaluate potentially significant environmental effects on the following resources:

- Aesthetics;
- Agriculture and Forestry Resources;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Energy;
- Geology and Soils;
- Greenhouse Gas Emissions;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Land Use and Planning;
- Mineral Resources;
- Noise;
- Public Services;
- Transportation and Traffic;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Wildfires.

With respect to the following resource areas, which were discussed in the NOP/IS, it was determined that no impacts would occur that would require analysis in the EIR:

- Population and Housing
- Recreation

The project includes an operations and maintenance (O&M) building within the project site. The on-site construction workforce for the project is estimated to be up to 500 individuals per day (during peak construction periods), however, the average daily workforce is expected to be 5 full time equivalent employees during operations. Maintenance personnel would be expected to visit the project site several times per year for routine maintenance, but they would likely be drawn from the local labor force and would commute from their permanent residences to the project site during those times. However, even if the employees were hired from out of the area and had to relocate to northwestern Kern County, it is expected that housing would be available in the nearby communities of Lost Hills approximately 15 miles to the south and Kettleman City approximately 16 miles to the north. Consequently, this would represent a minor increase in the number of users at local recreational facilities. As a result, the project would not directly or indirectly induce the development of any new housing or businesses, and there would not be a substantial increase in the use of parks or other recreational facilities such that replace facilities would be needed or deterioration of existing facilities would occur. No impacts to population and housing, or recreation, would occur and no further analysis is warranted.

Additionally, no comments were received during circulation of the IS/NOP indicating that impacts to Population and Housing or Recreation would need to be addressed. No further discussion of these topic is warranted. For a complete analysis of these impacts, please refer to Appendix A of this EIR.

2.5.1 Required EIR Content and Organization

This EIR includes all of the sections required by CEQA. **Table 2-2: Required EIR Contents**, contains a list of sections required under CEQA, along with a reference to the chapter in which they can be found in this EIR document.

TABLE 2-2: REQUIRED EIR CONTENTS

Requirement (CEQA Guidelines Section)	Location in EIR
Table of contents (Section 15122)	Table of Contents
Summary (Section 15123)	Chapter 1
Project description (Section 15124)	Chapter 3
Significant environmental impacts (Section 15126.2)	Sections 4.1–4.18
Environmental setting (Section 15125)	Sections 4.1–4.18
Mitigation measures (Section 15126.4)	Sections 4.1–4.18
Cumulative impacts (Section 15130)	Sections 4.1–4.18
Growth-inducing impacts (Section 15126.2)	Chapter 5
Effects found not to be significant (Section 15128)	Chapters 1, 5; Sections 4.1–4.18
Significant irreversible changes	Chapter 5
Unavoidable significant environmental impacts (Section 15126.2)	Chapter 5
Alternatives to the project (Section 15126.6)	Chapter 6
Organizations and persons consulted	Chapter 8
List of preparers (Section 15129)	Chapter 9
References (Section 15129)	Chapter 10

The content and organization of this EIR are designed to meet the requirements of CEQA and the *CEQA Guidelines*, as well as to present issues, analysis, mitigation, and other information in a logical and understandable way. This EIR is organized into the following sections:

- Chapter 1, *Executive Summary*, provides a summary of the project description and a summary of the environmental impacts and mitigation measures.
- Chapter 2, *Introduction*, provides CEQA compliance information, an overview of the decision-making process, organization of the EIR, and a responsible and trustee agency list.
- Chapter 3, *Project Description*, provides a description of the location, characteristics, and objectives of the projects, and the relationship of the projects to other plans and policies associated with the project.
- Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, contains a detailed environmental analysis of the existing conditions, projects impacts, mitigation measures, and cumulative impacts.
- Chapter 5, *Consequences of Project Implementation*, presents an analysis of the project's cumulative and growth-inducing impacts and other CEQA requirements, including significant and unavoidable impacts and irreversible commitment of resources.
- Chapter 6, *Alternatives*, describes a reasonable range of alternatives to the projects that could reduce the significant environmental effects that cannot be avoided.
- Chapter 7, *Responses to Comments*, is reserved for responses to comments on the EIR.
- Chapter 8, *Organizations and Persons Consulted*, lists the organizations and persons contacted during preparation of this EIR.

- Chapter 9, *Preparers*, identifies persons involved in the preparation of the EIR.
- Chapter 10, *Bibliography*, identifies reference sources for the EIR.
- *Appendices* provide information and technical studies that support the environmental analysis contained within the EIR.

The analysis of each environmental category in Chapter 4 is organized as follows:

- “Introduction” provides a brief overview on the purpose of the section being analyzed with regards to the project.
- “Environmental Setting” describes the physical conditions that exist at this time and that may influence or affect the topic being analyzed.
- “Regulatory Setting” provides State and federal laws and the Kern County General Plan goals, policies, and implementation measures that apply to the topic being analyzed.
- “Impacts and Mitigation Measures” discusses the impacts of the projects in each category, presents the determination of the level of significance, and provides a discussion of feasible mitigation measures to reduce any impacts.
- “Cumulative Setting, Impacts, and Mitigation Measures” provides a discussion of the cumulative geographic area for each resource area, and analysis of whether the project would contribute to a significant cumulative impact, and if so, identifies cumulative mitigation measures.

2.6 Responsible and Trustee Agencies

Projects or actions undertaken by the lead agency, in this case the Kern County Planning and Natural Resources Department and the California State Lands Commission, may require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Other such agencies are referred to as “responsible agencies” and “trustee agencies.” Pursuant to Sections 15381 and 15386 of the *CEQA Guidelines*, as amended, responsible agencies and trustee agencies are defined as follows:

- A “responsible agency” is a public agency that proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term “responsible agency” includes all public agencies other than the lead agency that have discretionary approval power over the project (Section 15381).
- A “trustee agency” is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California (Section 15386).

The various public, private, and political agencies and jurisdictions with a particular interest in the project may include, but are not limited to, the following:

2.6.1 Federal Agencies

- United States Fish and Wildlife Service (USFWS)
- United States Environmental Protection Agency (EPA)
- Federal Aviation Administration (FAA)
- United States Army Corps of Engineers (USACOE)

2.6.2 State Agencies

- Governor's Office of Planning and Research (OPR)
- California Air Resources Board (CARB)
- California Energy Commission (CEC)
- California Public Utilities Commission (CPUC)
- California Department of Fish and Wildlife (CDFW)
- Central Valley Regional Water Quality Control Board (RWQCB)
- California Department of Transportation (Caltrans), District 9
- California Native American Heritage Commission (NAHC)

2.6.3 Regional Local Agencies

- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- Kern Council of Governments (KCOG)

2.6.4 Kern County

- Planning and Natural Resources Department
- Public Works Department
- Public Health Services Department, Environmental Health Services Division
- Fire Department (KCFD)
- Sheriff's Department (KCSO)

Other additional permits or approvals may be required for the project.

2.7 Incorporation by Reference

In accordance with Section 15150 of the *CEQA Guidelines* to reduce the size of the report, the following documents are hereby incorporated by reference into this EIR and are available for public review at the Kern County Planning and Natural Resources Department. A brief synopsis of the scope and content of these documents is provided below.

2.7.1 Kern County General Plan

The Kern County General Plan is a policy document with land use maps and related information that are designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Kern County jurisdiction, excluding the metropolitan Bakersfield planning area. This document, adopted on June 14, 2004, and last amended on September 22, 2009, helps ensure that day-to-day decisions conform to the long-range program designed to protect and further the public interest as related to Kern County's growth and development and mitigate environmental impacts. The Kern County

General Plan also serves as a guide to the private sector of the economy in relating its development initiatives to the public plans, objectives, and policies of the County.

2.7.2 Kern County Zoning Ordinance

According to the Kern County Zoning Ordinance Chapter 19.02.020, Purposes, Title 19 was adopted to promote and protect the public health, safety, and welfare through the orderly regulation of land uses throughout the unincorporated area of Kern County. Further, the purposes of this title are to:

- Provide the economic and social advantages resulting from an orderly planned use of land resources;
- Encourage and guide development consistent with the Kern County General Plan;
- Divide Kern County into zoning districts of a number, size, and location deemed necessary to carry out the purposes of the Kern County General Plan and this title;
- Regulate the size and use of lots, yards, and other open spaces;
- Regulate the use, location, height, bulk, and size of buildings and structures;
- Regulate the intensity of land use;
- Regulate the density of population in residential areas;
- Establish requirements for off-street parking;
- Regulate signs and billboards; and
- Provide for the enforcement of the regulations of Chapter 19.02.

2.7.3 Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments (COG), and was adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing need and transportation planning.

2.7.4 Kern County Airport Land Use Compatibility Plan

The Kern County Airport Land Use Compatibility Plan (ALUCP) was originally adopted in 1996 and has since been amended to comply with Aeronautics Law, Public Utilities Code (Chapter 4, Article 3.5) regarding public airports and surrounding land use planning. As required by that law, proposals for public or private land use developments that occur within defined airport influence areas are subject to compatibility review. The principal airport land use compatibility concerns addressed by the plan are: (1) exposure to aircraft noise, (2) land use safety with respect to both people and property on the ground

and the occupants of aircraft, (3) protection of airport air space, and (4) general concerns related to aircraft overflights.

The ALUCP identifies policies and compatibility criteria for influence zones or planning area boundaries. The ALUCP maps and labels these zones as A, B1, B2, C, D and E, ranging from the most restrictive (A – airport property-runway protection zone) to the least restrictive (D – disclosure to property owners only) while the E zone is intended to address special land use development. As required by law, the following affected cities have adopted the ALUCP for their respective airports: Bakersfield, California City, Delano, Shafter, Taft, Tehachapi, and Wasco.

2.8 Sources

This EIR is dependent upon information from many sources. Some sources are studies or reports that have been prepared specifically for the project. Other sources provide background information related to one or more issue areas that are discussed in this document. The sources and references used in the preparation of this EIR are listed in Chapter 10, *Bibliography*, and are available for review during normal business hours at the Kern County Planning and Natural Resources Department, located at 2700 “M” Street, Suite 100, Bakersfield, CA 93301-2370. This EIR is also available on the Kern County Planning and Natural Resources Department website: <https://kernplanning.com/planning/environmental-documents/>.

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Chapter 3

Project Description

3.1 Introduction

This Environmental Impact Report (EIR) has been prepared by Kern County (County), which is the CEQA Lead Agency, to identify and evaluate potential environmental impacts associated with implementation of the Azalea Solar Project (project). The project would occur over a total project area of 640-acres. SF Azalea LLC (project proponent) is proposing use approximately 340 acres of the overall 640 acres (project site) for solar power generation and associated infrastructure. More specifically, the project is located within two separate assessor parcels (APN# 043-210-17 – 480 acres) and (APN# 043-210-018 – 160 acres). Within the 480-acre parcel, approximately 267 acres would enclose approximately 231 acres used for solar power generation and associated infrastructure and within the 160-acre parcel, approximately 65 acres would fence an approximate 53 acres used solar power generation and infrastructure. It should be noted within this document references to the project site are inclusive of the 640 acres.

The photovoltaic (PV) solar facility and associated infrastructure would enable the generation of up to 60 megawatts (MW) of renewable electrical energy supported by a Battery Energy Storage System (BESS) capable of storing approximately 55 MW of energy. The BESS would be located on approximately 5 acres of the overall 640 acres of privately-owned land. The project's permanent facilities would include, but are not limited to, service roads, a power collection system, inverter stations, transformer systems, transmission lines, electrical switchyards, project substations, energy (battery) storage system, and operations and maintenance facilities.

Implementation of the project as proposed includes the following requests:

- Conditional Use Permit (CUP 10, Map No. 3) to allow for the construction and operation of an approximate 60 MW solar facility, as well as ancillary structures including a 55 MW BESS, on the 640-acre site within the A (Exclusive Agriculture) zone district pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.
- Conditional Use Permit (CUP 14, Map No. 3) to allow for the construction and operation of a microwave communications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.F of the Kern County Zoning Ordinance.
- Cancellation of a Williamson Act Contract to be processed for APN 043-210-17 within the proposed CUP boundary.

The power generated on the project site would assist the State in complying with the Renewables Portfolio Standard under Senate Bill 350, which requires that by December 31, 2030, 50 percent of all electricity sold in the state shall be generated from renewable energy sources. The power generated on the project site would be sold to California investor-owned utilities, municipalities, community choice aggregators, or other purchasers in furtherance of the goals of the California Renewable Energy Portfolio Standard. The project has an anticipated operational life of up to approximately 35 years. At the end of the project's operational term, the project proponent would determine whether the project site should be decommissioned and deconstructed or if it would seek an extension of its CUP. If any portion of the project site is decommissioned, it would be converted to other uses in accordance with the applicable land use regulations in effect at that time.

3.2 Project Location

The project site is located south of the Kern County/Kings County Line, in an unincorporated area of northwestern Kern County, CA and is located within the jurisdiction of Kern County with an access road adjacent to the Kern/Kings County line. The project site is located in Section 11 of Township 25 South, Range 19 East in the Mount Diablo Base and Meridian. Please see **Figure 3-1: Regional Vicinity Map** and **Figure 3-2: Local Vicinity Map**.

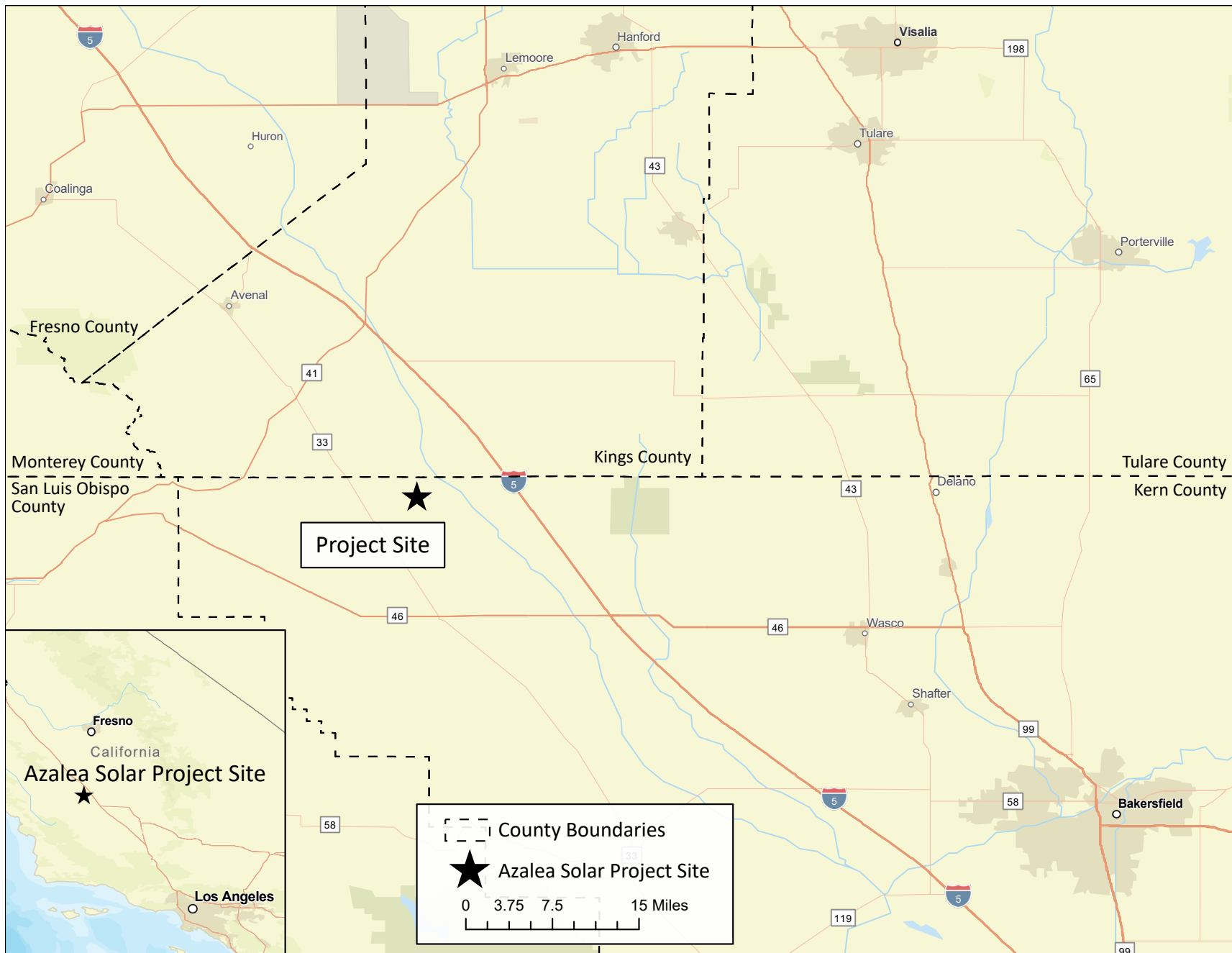
The project site is located approximately 2.5 miles northeast of Twisselman Road and Kings Road, approximately 16 miles south of Kettleman City, approximately 14 miles northwest of the community of Lost Hills, approximately 6 miles west of Interstate 5, and approximately 4 miles east of State Route 33. The proposed project is located in the northwestern portion of the Kern County Valley Region. The project site is made up of two (2) privately owned parcels (Assessor's Parcel Numbers (APNs): 043-210-17 and 043-210-18) totaling approximately 640 acres of largely undeveloped land. Please see **Figure 3-3: Existing Parcel Map**. The total study area for this project is larger than the area that will be subjected to entitlements, as it includes gas tie lines and access road across private land.

Primary access to the project site would be via an existing dirt access road along the Kern County/Kings County boundary. The existing road intersects with King Road/25 Avenue approximately one mile north of the proposed solar installation. This portion of roadway would be improved in a westerly direction from King Road/25 Avenue within Kern County jurisdiction. These improvements would be approximately 0.8 miles in length. At this end of the 0.8 miles, the roadway improvement would be continued in a southerly direction entirely within Kern County. The balance of the roadway, other improvements, and the solar facility itself would occur entirely within Kern County. Please see **Figure 3-4: Aerial Photograph**.

3.3 Project Objectives

The project proponent had defined the following objectives for the project:

- Assist the State of California in achieving or exceeding its Renewable Portfolio Standard (RPS), Senate Bill 350, Senate Bill 100, and the California Global Warming Solutions Act (Assembly Bill 32) and greenhouse gas emissions reduction objectives by developing and constructing new California RPS-qualified, solar power generation facilities producing approximately 60 MW.
- Develop a commercially viable solar power generation and battery storage facility that would support the economy by investing in the local community, creating local construction jobs, and increase tax and fee revenue to the County.
- Develop a project would generate a maximum of 500 jobs during construction and approximately 5 permanent jobs during operation to provide increased business for local contractors and vendors.
- Produce and transmit electricity at a competitive cost.
- Assist Kern County in achieving the goal in the Energy Element of its General Plan to develop large-scale solar energy development as a major energy source in the County.
- Help Southern California Community Choice Aggregators in fulfilling their local renewable energy procurement goals.

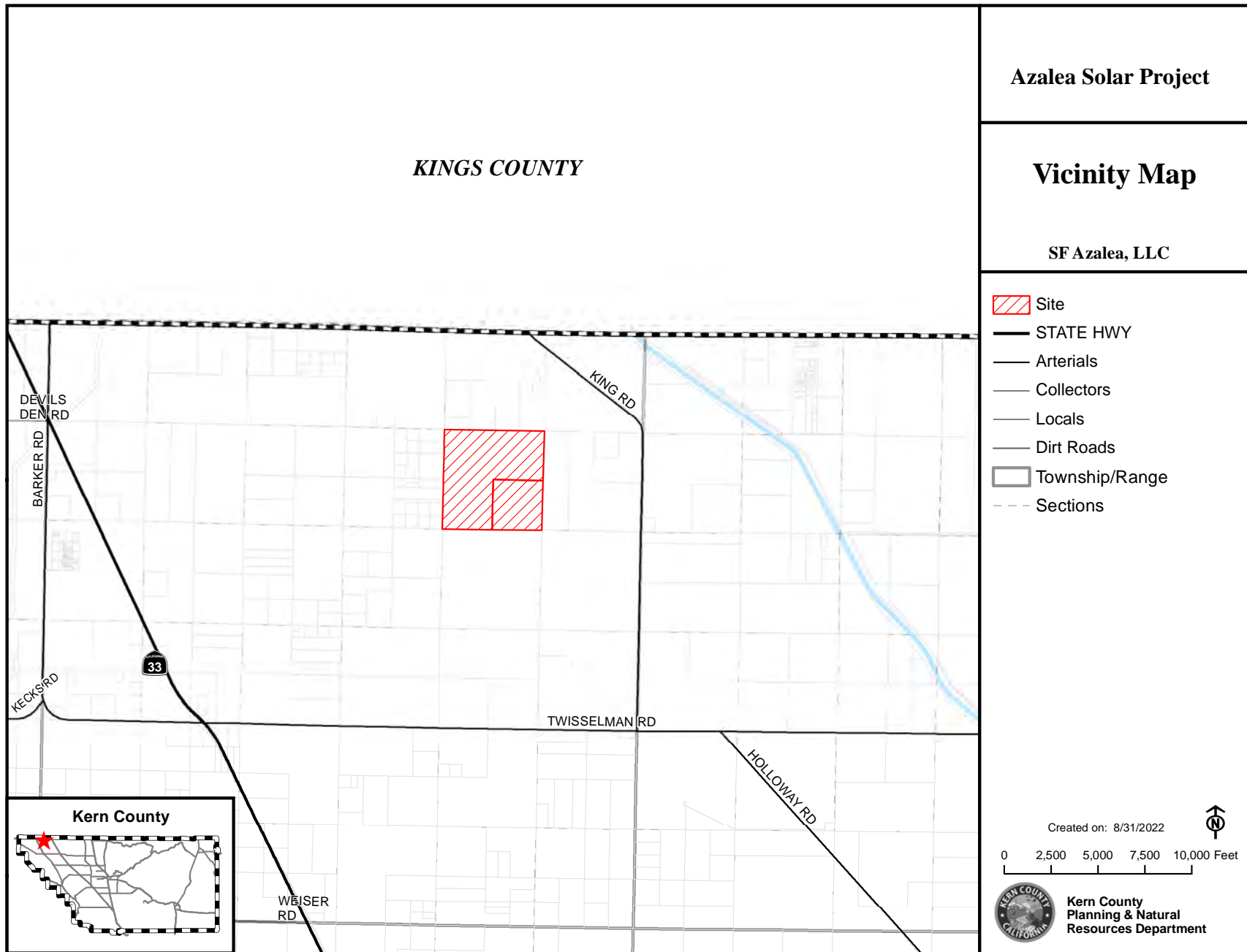


SOURCE: Google Earth, 2021

FIGURE 3-1: Regional Vicinity Map
 Draft Environmental Impact Report
 Azalea Solar Project



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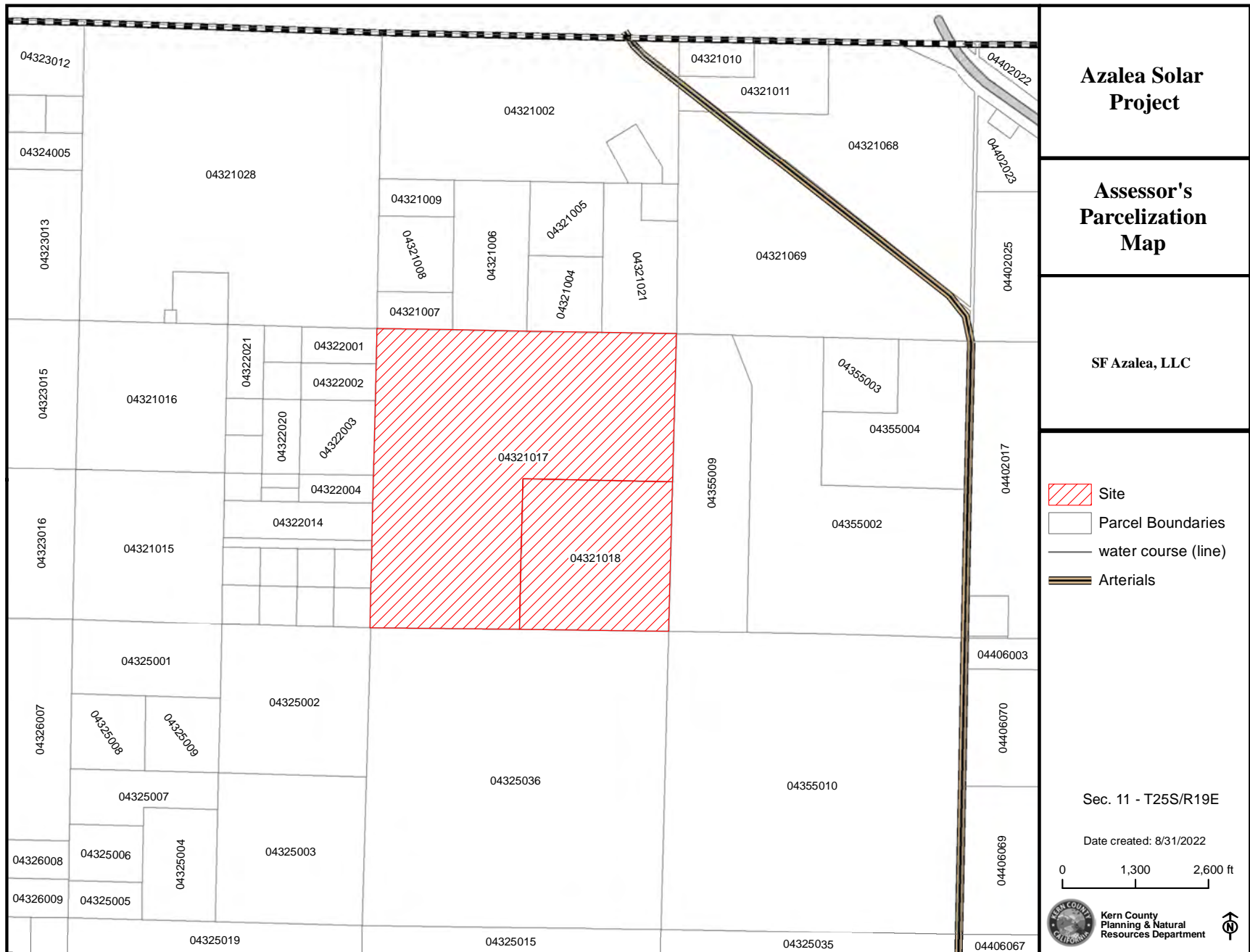


SOURCE: Kern County, 2022

FIGURE 3-2: Local Vicinity Map
Draft Environmental Impact Report
Azalea Solar Project



Not to scale



SOURCE: Kern County, 2022

FIGURE 3-3: Existing Parcel Map
 Draft Environmental Impact Report
 Azalea Solar Project



Not to scale



SOURCE: Nearmap, 2022

FIGURE 3-4: Aerial Photograph
 Draft Environmental Impact Report
Azalea Solar Project



Not to scale

3.4 Project Background

Kern County Planning and Natural Resource Department, as Lead Agency, has determined that an Environmental Impact Report is necessary for the proposed project. Per CEQA Guideline, Kern County circulated the Notice of Preparation/Initial Study (NOP/IS) for the project from September 30, 2021, to November 1, 2021 to allow 30 days for public review. A scoping meeting was held on October 21, 2021 to give an overview of the proposed project and address comments.

3.5 Environmental Setting

The project site is privately-owned and used for agriculture and grazing within the northwestern extent of Kern County, California. The project is in the Central California Valley Ecoregion and the United States Geological Survey (USGS) Avenal Gap 7.5-minute topographical quadrangle. Development in the area surrounding the project site is predominantly agriculture. The proposed project is located within two separate assessor parcels (APN# 043-210-17 – 480 acres) and APN# 043-210-018 – 160 acres). **Table 3-1: Project Assessor Parcel Numbers, Existing Map Codes, Existing Zoning, and Acreage** below identifies the individual parcels, their respective assessor parcel numbers (APN), acreages, and existing zoning designations. Please see **Figure 3-5: Existing General Plan Designations**, and **Figure 3-6: Existing Zoning Classifications**.

TABLE 3-1: PROJECT ASSESSOR PARCEL NUMBERS, EXISTING MAP CODES, EXISTING ZONING, AND ACREAGE

APN	Existing Map Code Designation	Existing Zoning	Proposed Usage	Estimated Acreage
043-210-17	8.3; 8.3/2.5	A	Solar Facilities	480.00
043-210-18	8.3; 8.3/2.5	A	Solar Facilities	160.00
Project Site Total				640.00
043-210-27*	8.3	A	Arco Substation	20.26
043-210-02*	8.3	A	Access Road/Gen Tie Line	4
043-210-04*	8.3	A	Access Road/Gen Tie Line	
043-210-06*	8.3	A	Access Road/Gen Tie Line	
043-210-07*	8.3	A	Access Road/Gen Tie Line	
043-210-08*	8.3	A	Access Road/Gen Tie Line	
043-210-09*	8.3	A	Access Road/Gen Tie Line	
043-220-01*	8.3	A	Gen-Tie Line	
Study Area Total				664.26

General Plan Map Code:

8.3 = Extensive Agriculture (Min. 20 Acre Parcel Size); 2.5 = Flood Hazard Overlay

Zone Designation:

A = Exclusive Agriculture

*Parcel is included in study, but not part of the Conditional Use Permit

The project site is located within the boundaries of Agricultural Preserve No. 1 and one of the parcels (043- 210-17 – 480 acres) is currently subject to a Williamson Act Land Use Contract. While some of the area that would be developed is under a Williamson Act Contract, none of the area within the project site is designated by the California Department of Conservation (DOC) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The portion of the project site that would be developed as a solar array and the generation tie (“gen-tie”) route is classified as Grazing Land. In addition, the proposed access road that would connect to King Road through land classified as Grazing Land or Nonagricultural and Natural Vegetation. There is land designated as Prime Farmland immediately adjacent to the east and south of the project site and land designated as Unique Farmland immediately adjacent to the east of the project site.

The project site consists of two gently sloping, vacant, and undeveloped parcels of land covered with sparse to moderately dense non-native vegetation currently used for grazing. The site is in a cycle of approximately every two years to facilitate planting cover crops for cattle grazing. Habitats within the project site include agricultural field, non-native annual grassland habitat, and patches of ruderal habitat along the fenced boundaries of the project site. The project site and surrounding lands are mostly flat and exhibit little topographic variation. There are no drainage features located on the site.

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas on its Flood Insurance Rate Maps (FIRMs). According to the FIRMs for the project area, portions of the southernmost project site is located in a 100-year flood area (Zone A, no base flood elevations determined); see **Figure 3-7: FEMA Floodplain Map**. However, the proposed project would not result in any construction within the Zone A area. The balance of the project site is not within a flood area (Zone X, areas determined to be outside the 0.2% annual chance floodplain).

The project site is not within a mineral recovery area or within a designated mineral and petroleum resource site designated by the Kern County General Plan, nor is it identified as a mineral resource zone by the Department of Conservation’s State Mining and Geology Board. The project site is not located within the County’s NR (Natural Resources) or PE (Petroleum Extraction) Zone Districts. The project site is within the San Joaquin Valley Basin of the San Joaquin Valley Air Pollution Control District.

3.5.1 Surrounding Land Uses

Table 3-2: Existing Project Site and Surrounding Properties, Existing Land Use, General Plan Map Code Designations, and Zoning, identifies the existing land use, the existing general plan land use designation, and the existing zoning for each of the two parcels within the project site. Additionally, such conditions are described for adjacent lands to the north, east, south, and west of the project site.

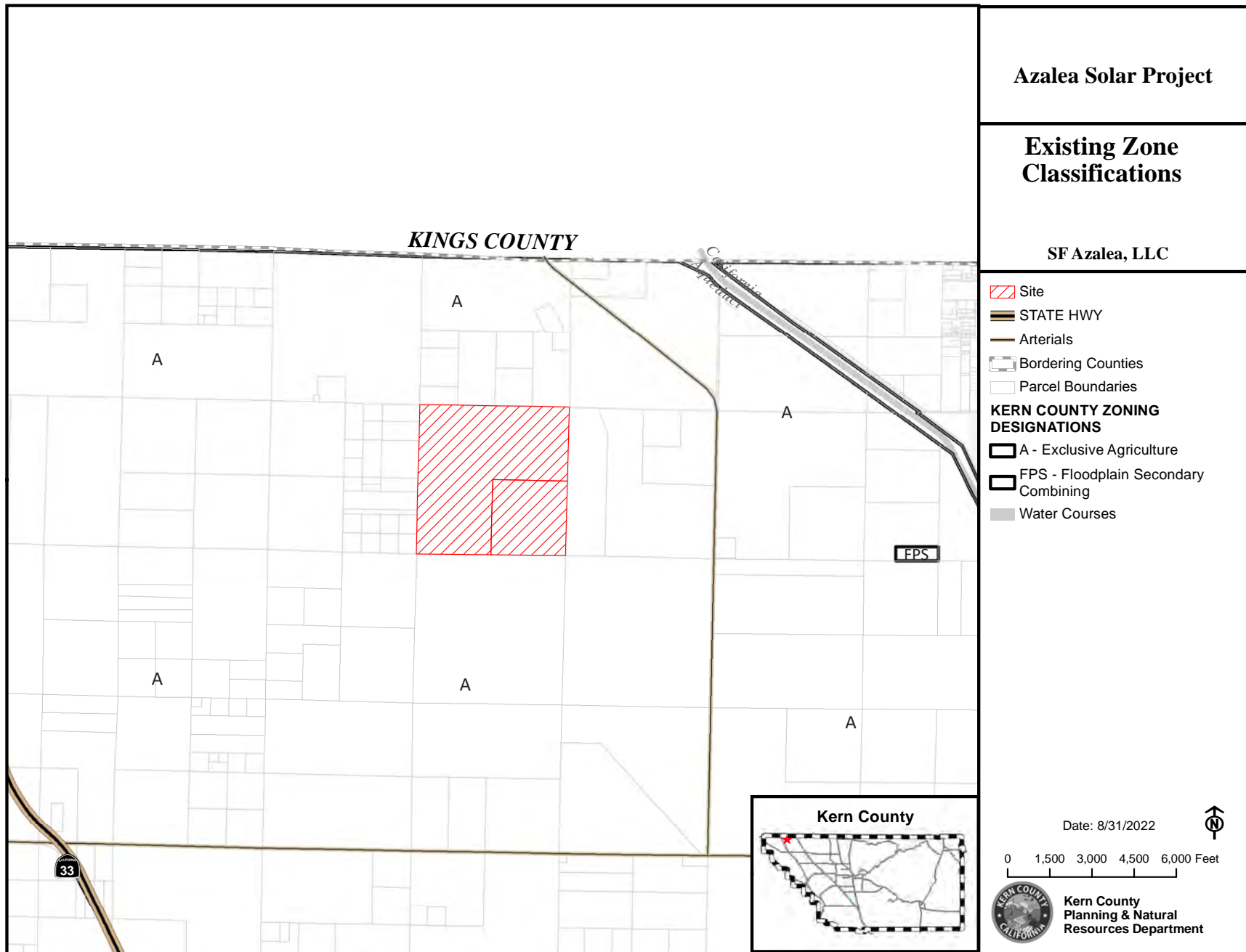
Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access roadways, a canal and a nut processing plant. Rural residential uses and other solar development are located to the south of the project site. There is one planned, solar energy and transmission project in the vicinity of the project site. This project includes the Chalan project site, located immediately east of the proposed project site.

The sensitive receptor closest to the project site is the rural residence approximately 0.67 mile to the east of the project site. Lost Hills Wonderful Park, a local park, is located approximately 14 miles southeast of the project site. The closest school to the site is the A.M. Thomas Middle School, located approximately 14 miles southeast of the project site.

The proposed project would be served by the Kern County Sheriff's Department for law enforcement and public safety services, with the closest substation being the North Area Substation, located at 181 East First Street. Fire protection and emergency medical services would be provided by the Kern County Fire Department, with the closest station being Fire Station #25, located at 100 Mirasol Avenue, and Kern County Emergency Medical Services for medical care and emergency services.



Draft Environmental Impact Report
Azalea Solar Project



SOURCE: Kern County, 2021

FIGURE 3-6: Existing Zoning Classifications

Draft Environmental Impact Report
Azalea Solar Project



Not to scale



SOURCE: US Federal Emergency Management Agency, 2021

FIGURE 3-7: FEMA Floodplain Map
Draft Environmental Impact Report
Azalea Solar Project



Not to scale

TABLE 3-2: EXISTING PROJECT SITE AND SURROUNDING PROPERTIES, EXISTING LAND USE, GENERAL PLAN MAP CODE DESIGNATIONS, AND ZONING

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
Project Site	Agricultural	8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay)	A (Exclusive Agriculture)
North	Agricultural, Vacant Land	8.3 (Extensive Agriculture)	A (Exclusive Agriculture)
South	Agricultural, Vacant Land	8.1/2.5 (Intensive Agriculture/Flood Hazard Overlay); 8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay)	A (Exclusive Agriculture)
East	Agricultural, Vacant Land	8.1 (Intensive agriculture (min. 20 acre parcel size))	A (Exclusive Agriculture)
West	Agricultural, Vacant Land	8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay)	A (Exclusive Agriculture)

The nearest public airport to the project site is the Wasco-Kern County Airport located approximately 31 miles southeast of the project site. The project site is not located within any safety or noise zones for the Wasco-Kern County Airport.

3.6 Land Use and Zoning

Kern County Zoning Ordinance

The existing land uses of the project and its surroundings listed above in **Table 3-2**. The entire project is subject to the provisions of the Kern County Zoning Ordinance is depicted in **Figure 3-7: Existing Zoning Classifications**.

Williamson Act Land Use Contract

A portion of the project site specifically, APN 043-210-17 within the proposed CUP boundary, is located within the boundaries of Agricultural Preserve No. 1 and is currently subject to a Williamson Act Land Use Contract. The Williamson Act Contract predominantly covers the project site boundaries, approximately 480 acres, with the exception of the southeast corner. The project would propose a cancellation of this contract.

3.7 Project Characteristics

3.7.1 Project Facilities

As discussed above, the project site consists of two parcels covering a total of 640 acres. Within this area, however, the proposed solar generation facilities would occur on a total of approximately 340 acres within portions of the two project parcels. The proposed layout is shown in **Figure 3- 8: Proposed Site Plan**. The project facilities would include the following components, each of which are described in greater detail thereafter:

- Photovoltaic (PV) modules and trackers
- Inverter and medium voltage transformers
- Electrical collection and distribution system
- Project substation
- Telecommunications
- Meteorological data collection system
- Battery storage
- Generation-Tie
- Arco Substation
- Lighting
- Signage
- Site access road(s)
- Operations and maintenance (O&M) facilities
- Microwave communications tower

Photovoltaic (PV) modules and trackers

The proposed project would utilize photovoltaic (PV) panels or modules (including but not limited to concentrated photovoltaic technology (CPV) or bi-facial technology which have similar rectangular shapes, sizes and thickness) on mounting frameworks to convert sunlight directly into electricity. Individual panels would be installed on tracker mount systems (single- or dual-axis, using galvanized steel or aluminum). The panels would rotate to follow the sun over the course of the day. Maximum panel height is anticipated to be up to 20 feet high, depending on the mounting system selected and on County building codes.

The PV panels would be arranged in rows in a uniform grid pattern, with each row separated by 10 to 20 feet. The panels would be deployed in proximity to the power conditioning stations (PCS) where the DC produced by the panels is converted to alternating current (AC) and transferred to the on-site substation and eventual delivery to the electrical grid.

Each PV module would be placed on a tracker mounting structure. The foundations for the mounting structures may extend up to 10 feet below ground, depending on the structure, soil conditions, and wind loads, and may be encased in concrete or utilize small concrete footings. A light-colored ground cover or

palliative may be used to increase electricity production. Final solar panel layout and spacing would be optimized for project area characteristics and the desired energy production profile.

Inverter and Medium Voltage Transformers

Photovoltaic energy generated by the panels would be delivered via cable to the PCS generally located within the solar array field. The PCS are comprised of inverters, transformers, and other electrical equipment to reach the needed collection level voltage. The footprint of each PCS, which is generally mounted on a concrete pad, would be approximately 12 feet by 30 feet. The proposed project would require approximately 40 PCS's, depending on final design details, but all would be located within the project footprint. The inverter converts the DC electricity to AC electricity, which then flows to a transformer where it is stepped up to the appropriate collection level voltage (34.5-kV). The proposed project would use Power Electronic HEM Central inverters or equivalent and one medium voltage transformers per inverter. Each inverter and transformer would be installed as per manufacturer's requirements.

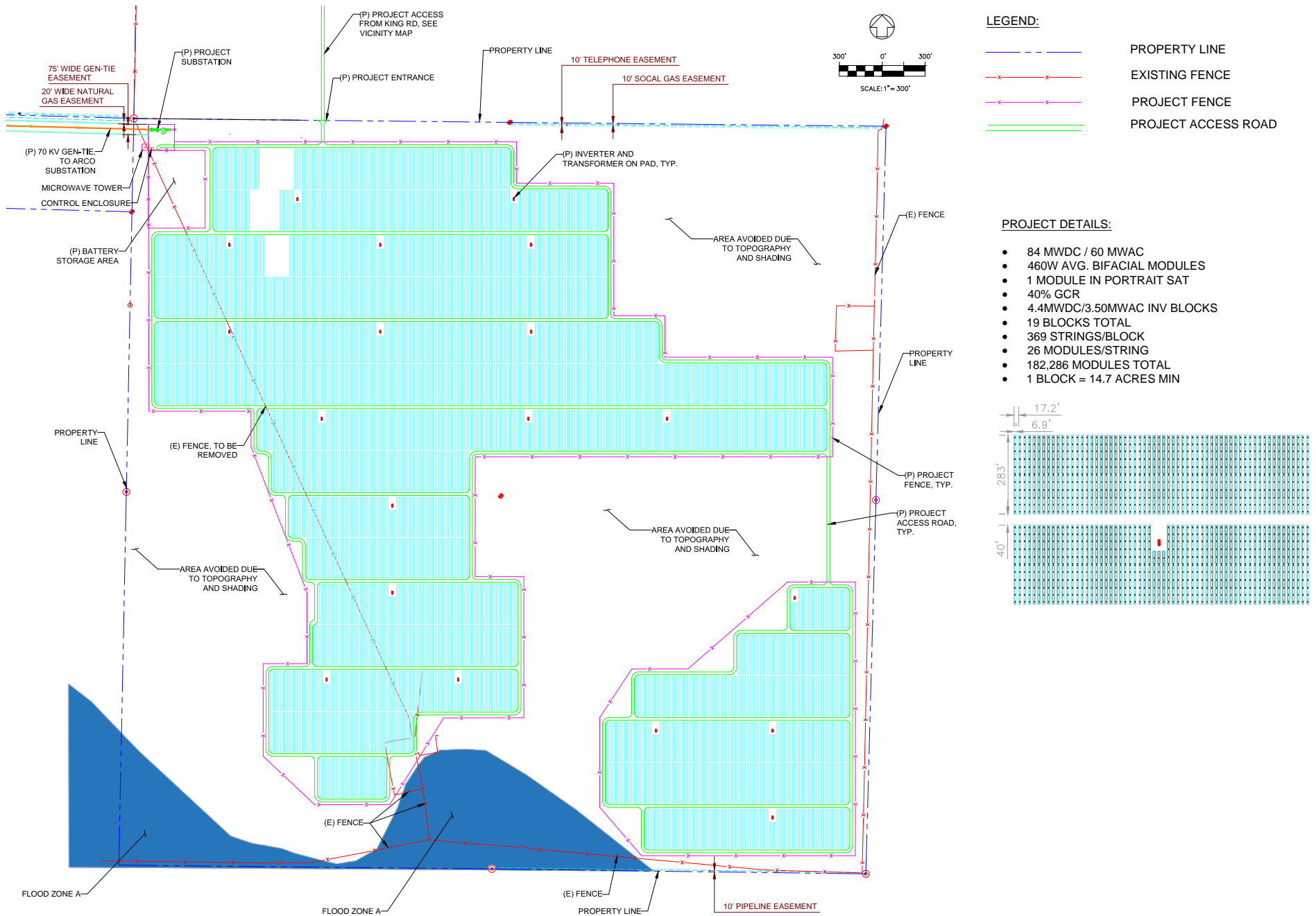
Electrical Collection and Distribution System

The DC output of multiple rows of PV modules connected in series would be collected through one or more combiner boxes and associated electrical wiring located throughout the Project site. The power would be delivered via an underground cable network to the inverters in the electrical equipment enclosures at the PCS, described above. Multiple transformers electrically connected in parallel would deliver AC power to the Project Substation located on-site.

Project Substation

Output from the PCS would be transferred via electrical conduits and electrical conductor wires to an on-site substation in the northwest corner of APN 043-210-17. The proposed substation would include transformers, breakers, switches, meters, and related equipment. Interconnection equipment, including the control house, would be installed aboveground and underground within the footprint of the substation. The footprint of the substation would be approximately 200 by 200 feet and the maximum height would be approximately 75 feet. The substation would also contain a control house building approximately 15 feet by 30 feet with a maximum anticipated height of 20 feet. The substation would be surrounded by a seven-foot high barbed wire chain-link fence and would comply with electrical codes. The proposed substation layout is shown in **Figure 3- 9: Proposed Substation General Arrangement**.

The proposed substation would include an emergency generator for use if the regional transmission system fails; this emergency generator would provide emergency power until the regional transmission system restores operations. The substation must have access to communication systems in the area to comply with Federal Energy Regulatory Commission/California Independent System Operator/Utility monitoring and control requirements. Compliance may be accomplished by underground lines, aboveground lines, or wireless communication.

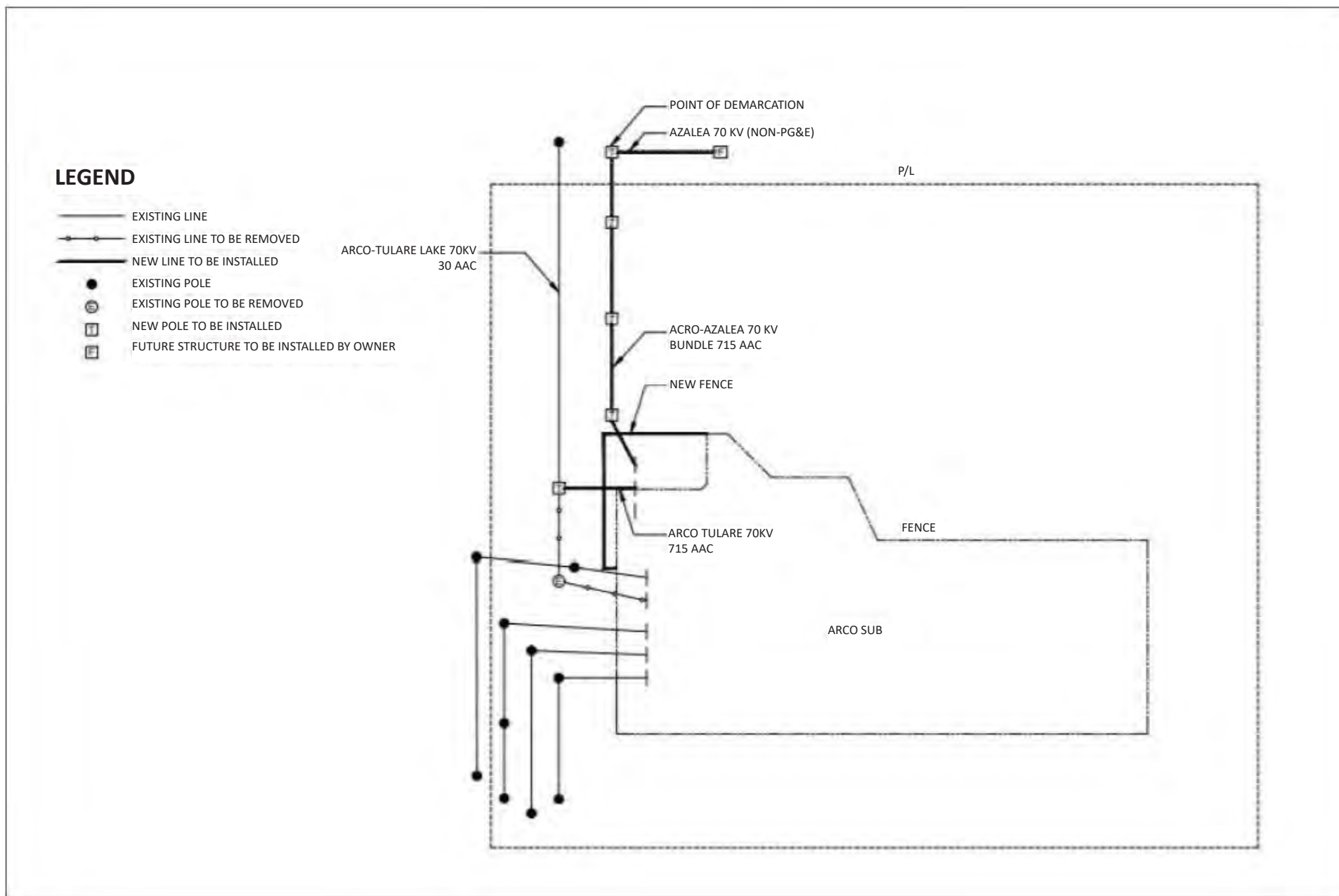


SOURCE: Idemitsu Renewables, 2021

FIGURE 3-8: Proposed Site Plan
Draft Environmental Impact Report
Azalea Solar Project



Not to scale



SOURCE: SF Azalea LLC, 2021

FIGURE 3-9: Proposed Substation General Arrangement
 Draft Environmental Impact Report
 Azalea Solar Project



Not to scale

Telecommunications Facilities

The proposed project would require redundant telecommunication connections. The primary telecommunication line would consist of fiber optic cable and/or copper telecommunication line installed above and/or below ground. The line would be attached to either existing utility lines located outside of the project site or the proposed gen-tie. The proposed telecommunication route would use a combination of existing poles, new poles, and/or below ground installations between the existing telecommunications infrastructure and the Arco Substation. Below ground installations are typically installed 24 to 48 inches below grade. Above ground lines are typically placed below existing distribution lines or on new, adjacent wooden poles. Lines would be placed within utility franchise easements to the extent feasible.

The point of interconnection to the existing telecommunication infrastructure would be located within a small telecommunications shelter. The interconnection utility service would consist of fiber stranded cables (Dielectric Self Supporting and Optical Ground Wire). A secondary internet connection would be provided using a point-to-point microwave wireless link.

On-Site Communications Tower

An on-site communications tower is proposed on the project site. The proposed tower would have a maximum height of 125 feet. The purpose of the communications towers is: (a) to facilitate communication between on-site entities and off-site entities, during the construction and decommissioning phases of the Azalea Solar Project; and (b) to transmit operational data to off-site monitoring systems during the operational phase of the Azalea Solar Project.

Meteorological Data Collection System

The proposed project would require four meteorological data collection systems. The systems would be mounted at various locations throughout the project site. The systems would include a variety of instruments to collect meteorological data. Meteorological data would be collected at the maximum height of the solar panels approximately 20 feet above the ground.

Battery Storage Component

The proposed Facility may include the installation of a battery storage component. Storage components are advantageous for renewable energy projects because they allow energy to be reliably fed to the grid from an otherwise intermittent energy production source. The battery system would consist of commercially available lithium ion batteries housed in enclosures. The enclosures would be approximately 8 feet wide by 40 feet long by 9.5 feet high (2.4 meters wide by 12 meters long by 2.9 meters high). The battery storage component would have a footprint of approximately 2.5 acres and would be immediately adjacent to the Project's Substation. Site preparation required for the battery storage enclosures requires leveling the area for a flat concrete foundation.

The proposed lithium ion batteries would principally comply with the UL 9450 standard for outdoor energy storage enclosures. The project will be subject to compliance with existing federal, state, and local regulations for health and safety, including the 2016 California Fire Code. The Applicant would select Battery Energy Storage System (BESS) providers that comply with the application-specific codes, standards, and regulations for the siting, construction, and operation of lithium-ion stationary BESS.

The project would include current best practices for fire safety. The BESS would contain a safety system as required by NFPA 855 and tested under the UL 9540A Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems. The enclosure wall is designed to contain the fire and prevent propagation.

The Generation-Tie

The 70 kV gen-tie would interconnect the Project Substation to the existing Pacific Gas and Electric (PG&E) Arco Substation. The gen-tie is proposed to extend to the west from the Project Substation for approximately 0.68 miles. The gen-tie right-of way would be from 25- to 75-feet-wide. Approximately 30 new poles would be installed to accommodate the gen-tie. The new poles would be constructed of either steel or wood at a maximum of 90 feet tall.

PG&E Arco Substation Additions

Improvements to the existing PG&E Arco Substation (APN:043-210-27) would include the modification of the substation area by approximately 9,000 square feet due to the relocation of the existing fence line further to the north by approximately 80 feet, and further to the west by approximately 120 feet. The area proposed for modification of the substation is located on a slope, therefore, moderate site grading and fill will be required to accommodate the substation facilities and temporary construction work area. PG&E will install new electric equipment at the substation, including new circuit breakers, bus structures, 70 kV disconnect switches, transformers, protective relaying, metering and control equipment, telemetering equipment, an electric grounding system, and underground conduits or trench systems. The modified substation area will be unmanned, with automated features and remote-control capabilities. For security, PG&E will install an approximately 9.5-foot-tall fence consisting of an 8-foot-tall chain-link fence fabric, topped with 1-foot “V” shaped topper with 6 rows of bar-wire and 1.5-foot diameter razor wire that will enclose the modified portion of the substation area.

PG&E Power Line Reconfiguration

Existing power poles and conductors located outside Arco Substation will require reconfiguration in order for the Azalea Solar Project to connect to the new substation equipment. This will be achieved by installing new structures, or by replacing existing structures with new structures, to accommodate the Azalea Solar Project generation tie-line and new line angles resulting from the new arrangements, taking into consideration land availability and site access to the power line support locations. Rearranging the existing power lines will require installing one new Tubular Steel Pole (TSP) and removing approximately one wood pole on the Arco-Tulare Lake 70 kV Power Line located on the west side of the substation fence line. The new pole will be approximately 80-95 foot-tall.

In order to accommodate the Azalea Solar Project generation tie-line interconnection, PG&E will extend an approximately 195-foot long 70 kV power line from the Arco Substation dead-end structure to a new Tubular Steel Pole located immediately west of the substation fence line. One additional approximately 80-95 foot tall Tubular Steel Pole will be added to support the line between the Azalea Solar Project and PG&E's Arco Substation.

PG&E Access and Construction Work Areas

Parking, lay down, and staging for construction materials and equipment at the Arco Substation site will temporarily occupy the northern portion of the graded pad. Work areas around the poles will require approximately a 50-foot radius. The modified substation area will result in approximately .50-acres of permanent disturbance. Temporary work areas outside the modified substation will total approximately 2-acres of temporary disturbance.

Lighting

The proposed in-site lighting would allow for maintenance and security activities during project operation. Low-level lighting would be installed at the entry gates, substation, PCS, and O&M building. Proposed lighting outside of the substation would be downward facing, shielded, or otherwise modified to prevent emission of light or glare beyond the property line or upward into the sky as required by Kern County Ordinance (Chapter 19.81) - Outdoor Lighting-Dark Skies requirements.

Signage

Signage would be installed on the fence in the vicinity of the main entry gates on the north side of the project site. The signage would identify the project owner, operator, and emergency contacts and provide safety and security information. Additionally, small-scale signage would be posted at the main entry gates and intermittently along the fencing around the PV panels to indicate “No Trespassing” and “Private Property” for security and safety purposes. All signage would conform to Kern County signage requirements.

Site Access road(s)

The project would be accessed from King Road approximately one mile north of the project site. An access road from King Road to the north boundary of the project site would be constructed as part of the proposed project. Additional access roads would be constructed between the rows of PV panels within the project site; see **Figure 3-8**. Access roads would be approximately 20 feet wide and would be accessed via multiple gates to allow access to the internal access roads. The access points and interior driveways would be constructed in accordance with Kern County and California Department of Forestry and Fire Protection (CalFire) requirements and maintained to ensure on-site circulation for emergency vehicles during all weather conditions.

The project site is currently partially enclosed by existing fencing along the east and south site boundaries. This fencing would remain and fencing surrounding other areas would be installed. The rows of PV panels would be enclosed within the project site fencing. Fencing would be a six-foot tall wire fence topped by one foot-tall three-strands of barbed wire. Fencing would be “wildlife friendly” with a five to seven-inch diagonal grid width at the lower portion to allow for the safe passage of small and medium sized mammals.

Operations and Maintenance Facilities

The project would include the construction of an O&M building with associated on-site parking (unpaved) within the project site. The O&M building may be co-located with the substation. Roads, driveways, and parking lot entrances would be constructed in accordance with Kern County improvement standards.

Parking spaces and walkways would be constructed in accordance with all California Accessibility Regulations.

3.7.2 Construction Activities

The construction period for the proposed project from site preparation through construction and testing is expected to commence in 2023 beginning with the Arco Substation expansion by PG&E. Work on the project site would commence in 2024 and would extend for approximately 12 months.

Construction of the proposed project would include the following activities:

- Site preparation
- Construction of access and internal circulation roads
- Grading and earthwork
- Dust control
- Panel installation
- Concrete foundations
- Structural steel work
- Electrical/instrumentation work
- Collector line installation
- Stormwater management facilities
- Architecture and landscaping
- PG&E Arco Substation modifications
- PG&E Electric transmission line facilities

Schedule and Workforce

Construction traffic would access the project site from King Road. It is estimated that up to 500 workers per day (during peak construction periods) would be required during construction of the proposed project. Employees would have the option to drive their own automobiles to the project site however, employees would be encouraged to carpool. Employees would park within the project site. The proposed project requires the temporary construction of approximately 1.5 acres within the project site for all-weather parking spaces, temporary office facilities, and equipment staging area. This area could be expanded to accommodate increased worker needs.

The first phase of construction would include roadway improvements from the existing paved segment extending westerly from King Road/25th Avenue. A roadway extension from approximately 0.8 miles west of that point south to the proposed solar facility would be constructed to enable access. (This segment of roadway would be gravel.) Construction activities are typically expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may continue 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging

equipment and material for the following day's construction activities, quality assurance/control, and commissioning.

Construction materials and supplies would be delivered to the project site by truck. It is anticipated that all such materials and supplies would be stored in a staging area on-site within the project boundaries for each phase of. When possible, equipment and materials would be stored in proximity to the area where work would be undertaken. For work along the gen-tie routes, it is anticipated that adequate land areas within the affected easements or rights-of-way would be available to accommodate staging/laydown areas during the construction phase and that off-site lands would not be affected. Truck deliveries would normally occur during daylight hours. However, there would be offloading and/or transporting to the project site on weekends and during evening hours.

Site Preparation, Earthwork and Construction Control Measures

The project site would be cleared and graded as needed to allow for the installation of the roadway extension, solar arrays, BESS, related infrastructure, interior access roads, and temporary construction staging areas. Sediment and erosion controls would be installed in accordance with an approved Storm Water Pollution Prevention Plan (SWPPP). Stabilized construction entrances and exits would also be installed at the project entrance driveways to ensure that potential for tracking of sediment onto adjacent public roadways is minimized.

The project site is mostly flat and would require minimal grading to allow for installation of the PV panels. Minimal grading is expected for the construction of the PCS, substation, BESS and driveways and tracker installation. The roadway extension is anticipated to be constructed by clearing, leveling, and surfaced with decomposed granite/gravel and/or compacted road base. Access roads within the interior of the site would be constructed by placing two to four inches of decomposed granite gravel and/or compacted road base or comparable material directly on the existing soil. Soil compaction, soil strengthening agents, or geo fabric may be used for access driveways. Compaction may also be required for the construction of the PCS, substation, control rooms, and access roads to support construction and ensure access for emergency vehicles.

Project grading would be minimized to the extent feasible to reduce unnecessary soil disturbance and movement. Earthwork would require the use of scrapers, excavators, dozers, water trucks, paddlewheels, haul vehicles, and graders. On-site trenching also would be required to enable the placement of underground electrical and communication lines. Certain access roads and turn-arounds may also be surfaced with aggregate or decomposed granite in conformance with emergency access requirements. Proposed grading would balance on-site and import or export of soils would not be required.

Noise-generating construction activities would be limited to construction hours allowed by the County's noise ordinance. All stationary construction equipment that may result in excessive noise or vibration levels would be operated away from sensitive noise receptors to the extent feasible. Construction activities would occur such that maximum noise levels at affected sensitive noise receptors (i.e., rural residential uses) would not exceed the County's adopted noise threshold levels.

Applicable local, State, and federal requirements and best management practices (BMPs) would be implemented during the construction phase. Consistent with the County zoning ordinance and with guidelines provided in the California Stormwater Quality Association's Construction Best Management Practice Handbook, BMPs would be implemented, including preparation of a SWPPP and a soil erosion

and sedimentation control plan to reduce the potential for erosion and to minimize effects on stormwater quality. Stabilized construction entrances and exits would be installed at the entrances to each site to reduce the tracking of sediment onto adjacent public roadways. All site preparation would occur in conformance with County BMPs and San Joaquin Valley Air Pollution Control District rules for dust control.

Dust Control

The project would implement standard fugitive dust control measures which would be implemented to construction contracts. These dust-minimizing techniques include:

- Watering active construction sites based on the type of operation, soil, and wind exposure.
- Stabilizing dust emissions at disturbed areas, including storage piles that are not actively utilized for construction purposes, using water or other approved substances.
- Prohibiting grading activities during periods of high wind (over 20 miles per hour).
- Limiting vehicle speed on-site to minimize dust emissions on unpaved driveways (15 miles per hour).
- Covering trucks hauling dirt, sand, or loose materials.
- Posting a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact would respond and take corrective actions within 48 hours. The phone number of the San Joaquin Valley Air Pollution Control District must also be visible to ensure compliance with rules regarding nuisance and fugitive dust emissions.

Security

Security would be maintained through installation of a six-foot tall wire fence topped by one foot-tall three-strands of barbed wire. Fencing would be “wildlife friendly” with a five to seven-inch diagonal grid width at the lower portion to allow for the safe passage of small and medium sized mammals. A security company would be contracted by the Applicant for security purposes during construction. Should the security system detect the presence of unauthorized personnel, the plant manager or surrogate would verify appropriate response and appropriate local authorities would be notified, if necessary. A Knox-Box containing keys for the proposed Facility would be installed to permit emergency access to the site.

Fire Suppression and Safety

Combustible vegetation or agricultural products on and around the proposed Facility would be actively managed by the Project owner during both the construction and operation phases to minimize fire risk. Combustible products would be either limited in height or removed primarily through a combination of dirt or gravel firebreaks, grazing, and mowing. A Vegetation Management Plan would be implemented during operations to guide the use of tools such as grazing and mowing to help manage accumulation of potential fine fuels around project infrastructure. The proposed Facility would also include fire breaks around the site boundary in the form of compacted dirt or gravel breaks and access driveways subject to Kern County standards.

Land Management

Currently, the proposed facility design would occur on approximately 340 acres of land designated and used for grazing, but that is tilled and used for agriculture and for crop production as well. Current agricultural practices result in low quality wildlife habitat, limiting its usefulness for special status species found in the area. The Project would comply with Kern County requirements to substantially continue agricultural activity in the form of grazing, allowing the vegetation to be passively reclaimed and thus enhancing wildlife habitat for San Joaquin kit fox (*Vulpes macrotis mutica*), among others. The passive enhancement of the land within the array area would provide a number of benefits including increased occupancy of wildlife species and wildlife connectivity.

Construction Water Use

Water would be required during the construction phase for dust suppression during such activities as clearing, grading, and soil compaction. Water may also be used at ingress/egress points to minimize tracking of dirt off-site onto local roadways (King Road/25th Avenue) from construction vehicles. Water would be obtained from on-site wells or delivered via truck from an off-site source(s) within the project vicinity. If water is trucked into the site, it is anticipated that an available local water source would be selected to minimize truck trips/lengths in transporting water to/from the site.

Water usage during construction, primarily for dust-suppression purposes, is not anticipated to exceed 75 acre-feet over the 12-month construction phase. The water would be trucked and stored on-site to be primarily used for dust suppression, soil compaction, concrete hydration and other miscellaneous activities requiring non-potable water.

Bottled water would be provided to the construction workers for consumption. Additionally, on-site restroom facilities for the construction workers would be provided by portable units to be serviced by licensed providers. No connection to a public sewer system is proposed or required for project construction or operation.

Electrical Supply

The temporary construction facilities would obtain electricity from a temporary drop off line from the local electrical distribution system. Up to ten portable electrical generators that meet local and State emission controls would be used during construction.

Hazardous Waste and Hazardous Materials Management

The proposed project would have minimal levels of materials on-site that have been defined as hazardous under 40 CFR, Part 261. Materials such as the following would be used during the construction, operation, and long-term maintenance of the proposed project:

- Diesel fuel, gasoline and motor oil– used for electrical equipment and backup generator
- Mineral oil - to be sealed within the transformers
- Various solvents/detergents – equipment cleaning
- Lead acid-based and/or lithium ion batteries – used for emergency backup and BESS

Hazardous materials and wastes will be managed, used, handled, stored, and transported in accordance with applicable local and State regulations. All hazardous wastes will be maintained at quantities below the threshold requiring a Hazardous Material Management Program (HMMP) (one 55-gallon drum). Though not expected, should any on-site storage of hazardous materials exceed one 55-gallon drum, an HMMP would be prepared and implemented.

Chemical storage tanks (if any) would be designed and installed to meet applicable local and state regulations. Any wastes classified as hazardous such as solvents, degreasing agents, concrete curing compounds, paints, adhesives, chemicals, or chemical containers would be stored (in an approved storage facility/shed/structure) and disposed of as required by local and state regulations. Material quantities of hazardous wastes are not proposed or anticipated to be used.

Non-Hazardous Wastes/Inert Solids

Inert solid wastes resulting from construction activities may include recyclable items such as paper, cardboard, solid concrete and block, metals, wire, glass, type 1-4 plastics, drywall, wood, and lubricating oils. Non-recyclable items include insulation, other plastics, food waste, vinyl flooring and base, carpeting, paint containers, packing materials, and other construction wastes. A Construction Waste Management Plan will be prepared for review by the County. Consistent with local regulations and the California Green Building Code, the Plan would provide for diversion of a minimum of 50 percent of construction waste from landfills.

Spill Prevention and Containment

Spill prevention and containment for construction and operation of the proposed project will adhere to the Environmental Protection Agency's (EPA) guidance on Spill Prevention Control and Countermeasures (SPCC).

Wastewater/Septic System

As designed the project would not require connection to any septic systems or sewer infrastructure. Instead temporary, portable restroom facilities will be provided during construction, decommissioning and operations. Such restroom facilities would be onsite during the construction phase, and would accommodate the limited number of employees with access to the facility. All employees would have access to the portable toilets and portable hand washing facilities, which would be serviced by truck rather than utilizing septic system(s).

3.7.3 Operation and Maintenance Activities

Once the proposed project is constructed, maintenance would generally be limited to the following:

- Cleaning of PV panels
- Monitoring electricity generation
- Providing site security
- Facility maintenance – replacing or repairing inverters, wiring, and PV modules

Schedule and Workforce

During the operational phase, the project would employ up to 5 full-time equivalent (FTE) personnel (or personnel hours totaling 5 FTE positions (i.e., an average of 200 personnel hours per week) who would commute to the site. Additional operational staff of up to five full-time employees could be on-site at any time when urgent repairs or maintenance are required.

The facility would operate seven days a week, 24 hours a day, generating electricity during normal daylight hours when the solar energy is available. Maintenance activities may occur seven days a week, 24 hours a day to ensure PV panel output when solar energy is available.

Operational Water Usage

Water demand for panel washing is not expected to exceed 10 acre-feet per year. Water is anticipated to be obtained from on-site wells or delivered via truck from an off-site source(s) within the project vicinity. If water is trucked into the site, it is anticipated that an available local water source would be selected to minimize truck trips/lengths in transporting water to/from the site.

Electrical Supply

Power for plant auxiliaries would be provided by the project's electrical generation or supplied by the local power provider. The proposed project would require power for the O&M facilities, electrical enclosures, tracker motors, associated structures, and for lighting and security.

Health and Safety

The proposed project would adhere to all Kern County Improvement Standards to ensure accessibility for emergency vehicles and safe operation during construction on project operation. The proposed project would implement measures for worker safety during construction in accordance with California Division of Occupational Safety and Health (CalOSHA) regulations and guidance and other best management practices. The proposed project will have an Emergency Response Plan (ERP). The ERP will address potential emergencies including chemical releases, fires, and injuries. All employees will be provided with communication devices, cell phones, or walkie-talkies, to provide aid in the event of an emergency.

To help ensure safety procedures are following, the proposed project would include safety training for construction workers and operational personnel. This would include both classroom and hands-on training in operating and maintenance procedures, general safety items, and the planned maintenance program. Training would include emergency procedures, fire prevention, and discussion of the location and proper use of emergency equipment. In addition, contact numbers for various local emergency response agencies, including fire, police, and medical services would be provided, and instruction for communication procedures to report potential health hazards and concerns would be a part of the training.

The proposed project also would include training on procedures to preventing electrical hazards that would reduce the potential for igniting combustible materials. The project also would limit areas where employee can smoke and parking areas for both personal, heavy equipment, and for project operations would be provided over mineral soil, asphalt, or concrete and at a safe distance from dry vegetation. In addition, heavy equipment also would also be equipped with other mechanisms such spark arresters or turbo-charging

(which eliminates sparks in exhaust). Lastly, all project vehicles would be equipped with fire extinguishers, and training on their maintenance and how to extinguish small fires would be provided

As discussed above, these safety precautions and emergency systems would be implemented as part of, design, construction, operation, and maintenance of the proposed project to ensure safe and reliable operation.

3.7.4 Decommissioning

Solar equipment has a typical lifespan of over 30 years. The proposed project expects to sell the renewable energy produced by the project under the terms of a long-term Power Purchase Agreement (PPA) with a utility or other power off taker. Upon completion of the PPA term, the project operator may, at its discretion, choose to enter into a subsequent PPA or decommission and remove the system and its components. Upon decommissioning, the solar facility could be converted to other uses in accordance with applicable land use regulations in effect at that time.

It is anticipated that, during project decommissioning, project structures that would not be needed for subsequent use would be removed from the project site. The site would revert to undeveloped land that supports agricultural production and wildlife habitat. The decommissioning and restoration process involves removing aboveground and belowground structures, restoring topsoil, revegetation, and seeding. Temporary erosion and sedimentation control BMPs would be used during the decommissioning phase.

Equipment would be de-energized prior to removal, salvaged (where possible), and shipped off-site to be recycled or disposed of at an appropriately licensed disposal facility. Once the solar modules are removed, the racks would be disassembled, and the structures supporting the racks would be removed. Site infrastructure would be removed, including fences, and concrete pads that may support the inverters, transformers and related equipment. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried by standard construction equipment. The fencing and gates would be removed, and all materials would be recycled to the extent practical. Project roads would be restored to their pre-construction condition unless they may be used for subsequent land use. The area would be thoroughly cleaned and all debris removed. Materials would be recycled to the extent feasible, with the remainder disposed of in landfills in compliance with all applicable laws.

3.8 Entitlements Required

The Kern County Planning and Natural Resources Department as the Lead Agency (per CEQA Guidelines Section 15052) for the proposed project has discretionary responsibility for the proposed project. To implement this project, the project proponent may need to obtain discretionary and ministerial permits/approvals including, but not limited to, the following:

Federal

- California Department of Fish and Wildlife (CDFW) Incidental Take Permit (if required)
- United States Army Corps of Engineers Section 404 Permit (if required)

State

- California Public Utilities Commission (CPUC)

- Section 851 Permit
- California Department of Fish and Wildlife (CDFW)
 - Section 2081 Permit (State-listed endangered species) (if required)
- Central Valley Water Quality Control Board (RWQCB)
 - National Pollution Discharge Elimination System (NPDES) Construction General Permit
 - General Construction Stormwater Permit (Preparation of a SWPPP)
- California Department of Transportation (Caltrans)
 - Right-of-Way Encroachment Permit (if required)
 - Permit for Transport of Oversized Loads

Local

- Kern County
 - Certification of Final Environmental Impact Report
 - Adoption of Mitigation Monitoring and Reporting Program
 - Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
 - Approval of Conditional Use Permits
 - Approval of Williamson Act Contract Cancellation
 - Approval of Kern County Grading and Building Permits
 - Approval of Kern County Access Road Design and Encroachment Permits
 - Approval of Fire Safety Plan
- San Joaquin Valley Air Pollution Control District
 - Approval of Fugitive Dust Control Plan
 - Authority to Construct (ATC)
 - Permit to Operate (PTO)

The preceding discretionary actions/approvals are potentially required and do not necessarily represent a comprehensive list of all possible discretionary permits/approvals required. Other additional permits or approvals from responsible agencies may be required for the proposed project.

3.9 Relationship of the Project to Other Solar Projects

The proposed project is being developed independently of other approved or proposed solar projects in the County. If approved, the project facilities would be subject to their own use permits, conditions of approval, interconnection agreements, and power purchase agreements. Kern County understands that the project facilities would be built and operated independently of any other solar project and, if approved, would not depend on any other solar project for economic viability.

3.9.1 Cumulative Projects

CEQA requires that an EIR evaluate a project's cumulative impacts. Cumulative impacts are the project's impacts combined with the impacts of other related past, present, and reasonably foreseeable future projects. As set forth in the *CEQA Guidelines*, the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. As stated in CEQA, Title 14, Section 21083(b), "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable."

According to the *CEQA Guidelines*:

"Cumulative impacts" refer to two or more individual effects which, when considered together, are considerable and which compound or increase other environmental impacts.

- (a) The individual effects may be changes resulting from a single project or a number of separate projects.*
- (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Section 15355).*

In addition, as stated in *CEQA Guidelines*, it should be noted that:

"The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the project's incremental effects are cumulatively considerable." (CCR, Title 14, Division 6, Chapter 3, Section 15064[h][5]).

Cumulative impact discussions for each environmental topic area are provided at the end of each technical analysis presented in Chapter 4 of this EIR. As previously stated, and as set forth in the *CEQA Guidelines*, related projects consist of "closely related past, present, and reasonable foreseeable probable future projects that would likely result in similar impacts and are located in the same geographic area" (CCR, Title 14, Division 6, Chapter 3, Section 15355).

The geographic scope for cumulative impact and analysis is a 6 mile buffer around the project's boundaries. This area is approximately 15.3 miles northwest of the Lost Hills community, with agricultural land being the predominant use in the surrounding areas. The project site and 6 mile buffer fall between I-5, to the east, and State Highway 33, to the west. Due to the project site being located 1 mile south of the County boundary, the cumulative impact geographic scope includes both Kings and Kern County.

Table 3-3: *Cumulative Projects List*, shows the related projects considered in the cumulative analysis.
Figure 3-10: *Cumulative Projects*, show the approximate location of the proposed solar projects in Kern County considered in the cumulative analysis.

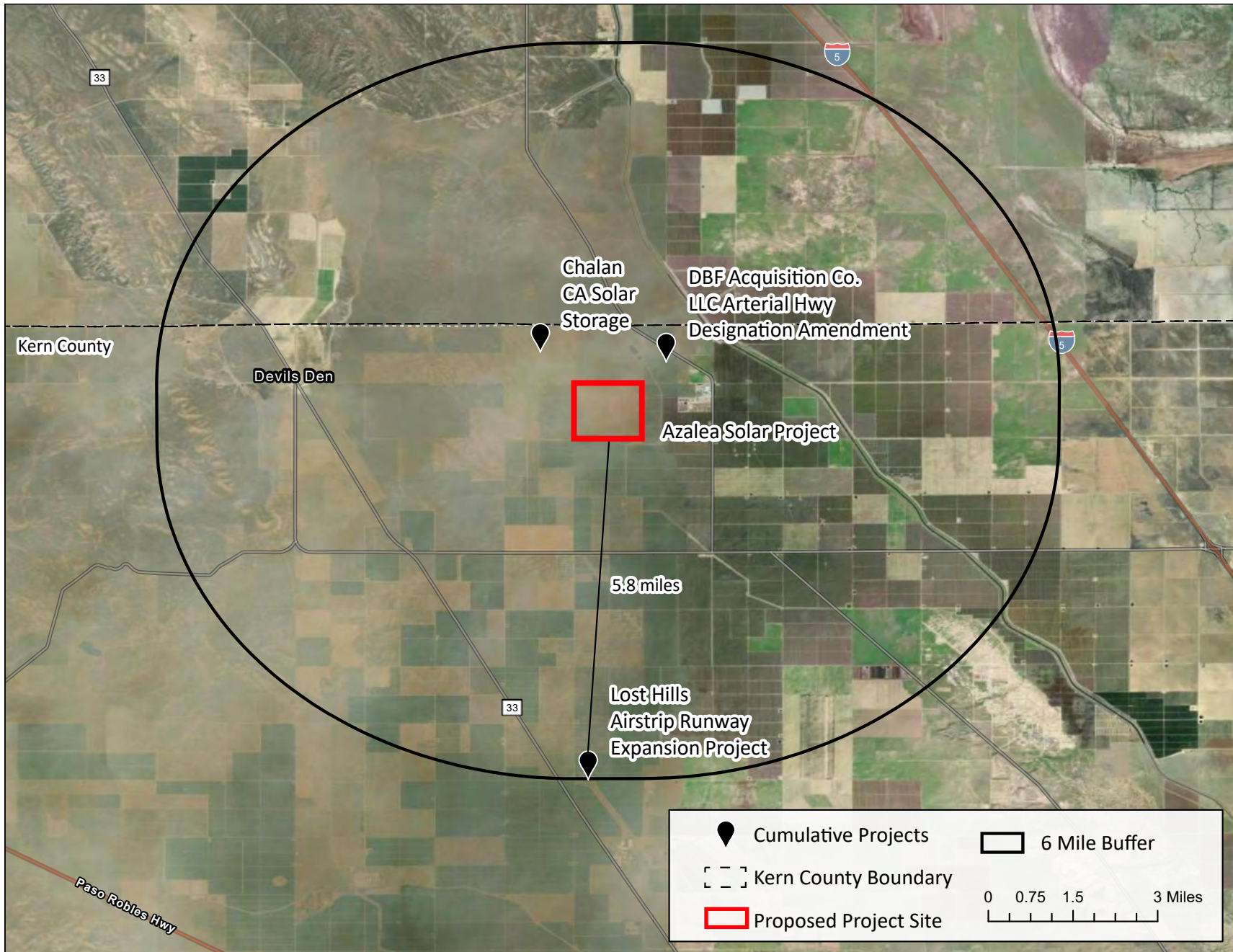
TABLE 3-3: CUMULATIVE PROJECTS LIST

Project Name	Distance to Project Site	Project Description	Case Type	Request	Project Site APN	Acreage/Square Feet	Project Status
1. Chalan CA Solar Storage, LLC*	Adjacent	Commercial Solar Project (65 MW)	CUP, Map 3	Conditional Use Permit (CUP)	043-210-28	618 acres	Applied
2. DBF Acquisition Co. LLC**	Adjacent	Arterial Hwy Designation Amendment	GPA, Map 3		043-210-69		Applied
3. Wonderful Pistachios & Almonds Lost Hills Airstrip**	5.8 miles	Runway Expansion Project	CUP 8, Map 27		057-290-181		Applied

NOTES:

* Indicates that the cumulative project is located within 1 mile of the proposed project.

**Indicates that the cumulative project is located within 6 miles of the proposed project.



SOURCE: ArcGIS Pro, 2021

FIGURE 3-10: Cumulative Projects
 Draft Environmental Impact Report
 Azalea Solar Project



Not to scale

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Section 4.1 Aesthetics

4.1.1 Introduction

This section of the EIR discusses impacts associated with the potential for the project to degrade the existing visual character or quality of the project site and its surroundings through changes in the existing landscape. Potential effects are evaluated relative to important visual features (e.g., scenic highways, scenic features) of the existing visual landscape and its users. Degradation of the visual character of a site is addressed through a qualitative evaluation of the changes to the aesthetic characteristics of the existing environment, and the project-related modifications that would alter the visual setting. The terms and concepts are used in the discussion below are used to describe and assess the aesthetic setting and impacts from the project.

Visual Concepts and Terminology

Visual or aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, a visual or aesthetic impact may occur.

The following terms and concepts are used in the discussion below to describe and assess the aesthetic setting and impacts from the project:

- **Viewshed** – defined as the surrounding geographic area from which the project is likely to be seen, based on topography, atmospheric conditions, land use patterns, and roadway orientations. “project viewshed” is used to describe the area surrounding a project site where a person standing on the ground or driving a vehicle can view the project site.
- **Key Observation Point (KOP)** – one or a series of points on a travel route or at a sensitive use area, such as a residence, where the view of a project would be the most revealing.
- **Scenic vista** – an area identified or known for high scenic quality. Scenic vistas may be designated by a federal, State, or local agency. Scenic vistas can also include an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing.
- **Scenic highway** – any stretch of public roadway that is designated as a scenic corridor by a federal, State, or local agency.

Sensitive receptors or sensitive viewpoints – viewer responses to visual settings are inferred from a variety of factors, including distance and viewing angle, type of viewers, number of viewers, duration of view, and viewer activities. The viewer type and associated viewer sensitivity are distinguished among project viewers in recreational, residential, commercial, military, and industrial areas. Viewer activities can range from a circumstance that encourages a viewer to observe the surroundings more closely (such as recreational activities), to discouraging close observation (such as commuting in heavy traffic). Residential viewers typically have extended viewing periods and are generally considered to have high visual sensitivity. For this reason, residential views are typically considered sensitive. Viewers from public parks, recreational trails, and/or culturally important sites also have high visual sensitivities; therefore, such

locations are considered sensitive viewpoints. Viewers in commercial, military, and industrial areas are not typically focused on the views and the areas do not promote enjoyment of views; therefore, viewers in these locations are assumed to have low sensitivity.

- **Viewing distance zones** – the landscape is subdivided into three distance zones based on relative visibility from travel routes or observation points. The three zones are: foreground, middleground, and background. The foreground zone includes areas less than ¼ mile away, the middleground zone includes areas ¼ mile to 3 miles away, and the background zone includes areas beyond 3 miles.
- **Visual sensitivity** – the overall measure of an existing landscape’s susceptibility to adverse visual changes. When viewing the same landscape, people may have different responses to that landscape and any proposed visual changes, based upon their values, familiarity, concern, or expectations for that landscape and its scenic quality. Because each person’s attachment to and value for a particular landscape is unique, visual changes to that landscape inherently affect viewers differently. Nonetheless, generalizations can be made about viewer sensitivity to scenic quality and visual changes.

Residents and recreational users (e.g., hikers, equestrians, tourists, etc.) are expected to be highly concerned with scenery and landscape character. Local motorists who commute daily through the same landscape may have a moderate concern for scenery, while people who work within highly urbanized areas may generally have a lower concern for scenic quality or changes to existing landscape character.

The visual sensitivity of a landscape is affected by the viewing distances at which it is seen. The visual sensitivity of a landscape also is affected by the travel speed at which a person is viewing the landscape (high speeds on a highway, low speeds on a hiking trail, or stationary at a residence).

The same feature of a project can be perceived differently by people depending on the distance between the observer and the viewed object. When a viewer is closer to a viewed object in the landscape, more detail can be seen, and there is greater potential influence of the object on visual quality because of its form or scale (relative size of the object in relation to the viewer). When the same viewed object is viewed at background distances, details may be imperceptible but overall forms of terrain and vegetation are evident, and the horizon and skyline are dominant. In the middle ground, some detail is evident in the foreground and landscape elements are seen in context with landforms and vegetation patterns in the background. The same levels of sensitivity apply in this case as with close-up and further away views—views from cars at high speeds would be less sensitive to changes than views at low speeds because more details can be drawn from the landscape at lower speeds.

4.1.2 Environmental Setting

Regional Character

The project site is located within the San Joaquin Valley immediately adjacent to the Kern County/Kings County Line in an unincorporated area of northwestern Kern County. The project site is located approximately 16 miles south of Kettleman City and approximately 14 miles northwest of the community of Lost Hills.

The San Joaquin Valley is surrounded by the Sierra Nevada range to the east, the Tehachapi Mountain Range along the south, and the Coastal Ranges to the west (EPA, 2021). The landscape of the vast San

Joaquin Valley region is dominated by agricultural operations, oil production/extraction, and pockets of urbanized areas, all of which have altered the once-natural, undeveloped landscape. The ground plane generally slopes downward from the south at the Tehachapi Mountain Range to the north and topography diminishes in areas within the San Joaquin Valley region. Accordingly, the landscape is mostly flat, lacking significant topographic relief consisting of expansive agricultural and extractive land uses, punctuated by intermittent development. There is little variety of vegetative cover, and grazing lands, croplands, solitary trees, and sparse residential landscaping tend to dominate. There are several planned, existing, and permitted solar energy and transmission projects in the region where the project site is located. In total there are over 10,000 acres of existing large scale commercial projects in the Kern County San Joaquin Valley area. Surrounding solar projects in the vicinity include the Lost Hills Solar Project, Blackwells Solar Par, Cenergy Power, and the Kern Solar Ranch. Although urbanization and utility-scale development within Kern County have resulted in development on large tracts of farmland, the pervasiveness of agricultural farming practices has helped maintain Kern County's agricultural and open space character. Generally, the aesthetic features of the regional visual environment appear uniform, with broad, flat landscapes leading to distant mountains and interspersed with urban, rural, and industrial development in varying densities and intensities.

The aesthetic features of the San Joaquin Valley where the project site is located include the Coastal Ranges to the west and the flat valley floor to the north, east, and south. Existing land use in the vicinity of the project site generally include undeveloped lands, agricultural lands including orchards, grazing land, access roadways, a canal and the Wonderful Pistachios and Almonds nut processing plant. Other solar development are located to the south of the project site.

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, the closest eligible state scenic highway is State Route (SR) 41 between SR 46 and SR 33 located approximately 12 miles northwest of the project site. The Kern National Wildlife Refuge is located approximately 13 miles to the east of the project site. The refuge consists of a visitor center and office complex situated on 11,249-acres of natural desert uplands, a relict riparian corridor, and developed marsh that serves as overwintering habitat for migratory birds, especially waterfowl. Approximately 8,200 visitors annually participate in refuge programs (USFWS, 2015).

Local Character

The nearest populated area to the project site in Kern County is the unincorporated community of Lost Hills located approximately 14 miles southeast of the project site. Kettleman City is located approximately 16 miles north of the project site in Kings County. Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access roadways, a canal and a nut processing plant.

The project site is located approximately 2.5 miles northeast of Twisselman Road, approximately 6 miles west of Interstate 5, approximately 4 miles east of State Route 3, and approximately 1 mile south of where King Road transitions to 25th Avenue. The project would be primarily accessed from an existing dirt access road along the Kern County/Kings County boundary. The existing road intersects with King Road/25 Avenue approximately one mile north of the proposed solar installation. Road improvements are proposed for this road as part of the project.

Elevations across the 640-acre project site range from approximately 383 feet above mean sea level to approximately 528 feet above mean sea level. The project site and surrounding lands are mostly flat and

exhibit little topographic variation. As described in more detail in Section 4.4, *Biological Resources*, the project site is dominated by California Annual Grassland and sparse, disturbed, ruderal plant communities.

Scenic Highways

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways within Kern County (see Section 4.1.3, *Regulatory Setting*, below for more information on the State Scenic Highway Mapping System). The closest Eligible Scenic Highway is State Route (SR) 41 between SR 46 and SR 33 located approximately 12 miles northwest of the project site (Caltrans, 2019). Prominent views along SR-41 adding to the scenic elements in the landscape for motorists include panoramic views of the open San Joaquin and Sunflower Valleys' landscape and views of the Coast Ranges surrounding the road for the majority of its extent. In addition to the State Scenic Highway Mapping System, the Kern County General Plan Circulation Element designates scenic routes and defines a scenic route as any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic quality and must be officially set as a Scenic Route by the Kern County Board of Supervisors or the State of California.

Lighting Environment

The project site does not currently contain any lighting and none of the dirt roads bordering or traversing the project site include street lighting. Offsite fixed lighting in the area immediately surrounding the project site includes lighting fixtures associated with the nearby PG&E Arco substation to the west of the project site and the Wonderful Pistachios and Almonds - King facility to the east of the project site. These sources of lighting produce sufficient nighttime lighting for operations and security. An additional source of nighttime lighting, although insubstantial, is from motorists passing through the area with headlights on.

Solar Panel Glare Potential

A solar panel comprises numerous solar cells. A solar cell differs from a typical reflective surface in that its surface is microscopically irregular and designed to trap the rays of sunlight for the purposes of energy production. The intent of solar technology is to increase efficiency by absorbing as much light as possible (which further reduces reflection and glare).

A common misconception about solar photovoltaic (PV) panels is that they inherently cause or create “too much” glare, posing a nuisance to neighbors and a safety risk for pilots. In certain situations, the glass surfaces of solar PV systems can produce glint (a momentary flash of bright light) and glare (a reflection of bright light for a longer duration); however, light absorption, rather than reflection, is central to the function of a solar PV panel so that it may absorb solar radiation and convert it to electricity. Solar PV panels are constructed of dark-colored (usually blue or black) materials and are covered with anti-reflective coatings. Modern PV panels reflect as little as two percent of incoming sunlight, which is similar to water and less than soil and wood shingles. Some of the concern and misconception is likely due to the confusion between solar PV systems and concentrated solar power (CSP) systems. CSP systems typically use an array of mirrors to reflect sunlight to heat water or other fluids to create steam that turns an electric generator.

Despite their low potential to create glare, PV panels can reflect sunlight skyward toward the light source, creating a potential glare impact for aircraft in the area. The effect is similar to what a motorist experiences when the sun is low in the sky and the car passes between the sun and a glass-fronted building that has been

treated with an anti-reflective coating. If the motorist is heading directly toward the building, the glare would be in the motorist's eyes. Otherwise, the motorist would have to rotate his or her head to observe the glare off to the side. Because aircraft typically travel at a higher rate of speed than vehicles, the effect is momentary, lasting only as long as the angle between the sun, water body, and aircraft is maintained. Unless an aircraft were descending at an angle sloped directly at the solar array with the sun directly behind the aircraft, any glare that might occur from solar panels would be below the pilot's horizon. Though unlikely, given the distance from publicly accessible roads to the project site, effects on eastbound motorists would likely be greatest in the early evening hours, when the sun is at its lowest arc in the western horizon. Glare would have its greatest impact on westbound travelers in the early morning hours, when the sun is rising in the east.

Interconnection to Arco Substation and Access Road

The views and lighting environment for the PG&E property are substantially similar to the project site. The PG&E property is developed with the existing Arco Substation.

4.1.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Scenic Highway Program

Caltrans manages the California Scenic Highway Program, which was created in 1963 by the California legislature to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The program includes a list of highways that are designated or eligible for designation as scenic highways. A highway may be designated as scenic based on certain criteria, including how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view. State laws governing the Scenic Highway Program are found in Sections 260 through 263 of the Streets and Highways Code.

As described in Section 4.1.2, *Environmental Setting*, there are no Designated State Scenic Highways within Kern County, and the project site is not located directly adjacent to any eligible State Scenic Highway. The closest Eligible Scenic Highway is State Route (SR) 41 between SR 46 and SR 33 located approximately 12 miles northwest of the project site.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to aesthetics. The policies, goals, and implementation measures in the Kern County General Plan related to aesthetics that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such

as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan (Kern County, 2009) evaluates the visual and aesthetic setting of Kern County and assess the potential for visual impacts. The Kern County General Plan Energy Element sets forth policies to encourage orderly energy development in visually sensitive areas.

The Kern County General Plan Circulation Element also provides a discussion regarding Scenic Routes. A Scenic Route is defined in the Kern County General Plan as any freeway, highway, road, or other public right-of-way which traverses an area of exceptional scenic quality. A roadway can only be designated as a scenic route by direct action of the Kern County Board of Supervisors or the State of California. A route may not be selected as scenic until a visual assessment of the route has been conducted to determine if the route meets the current scenic highway criteria as mentioned above and to what extent development has encroached on the scenic views. The County also has to prepare and adopt a plan and program for the protection and enhancement of adjacent roadside viewshed land. As such, goals, policies and implementation measures regarding Scenic Routes in the Circulation Element are focused on the need for the County to further develop their Scenic Route program and measures to protect scenic resources, which are not applicable to the proposed project.

The Kern County General Plan acknowledges the three routes identified as part of the California Scenic Highways Master Plan that are designated “Eligible State Scenic Highway” within the County. Route 1, which begins north of Mojave and continues to the Inyo County Line, consists of State Route 14 and State Highway 395. Route 2 consists of State Route 58 between Mojave and Boron. Route 3 consists of 5 miles of State Route 41 in northwest Kern County. The project site would not be visible from any of these routes. The Kern County General Plan provides general goals and policies for design features of development projects in order to reduce their impacts to scenic resources.

As SR-41 is not officially designated, it is not considered a scenic highway for this analysis; therefore, no policies regarding development within Scenic Routes would be applicable to the project. However, the Kern County General Plan provides general goals and policies for design features of development projects in order to reduce their impacts to scenic resources. The policies and implementation measures in the Kern County General Plan for aesthetic resources applicable to the proposed project are provided below. The Kern County General Plan contains goals, policies, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1: Land Use, Open Space, and Conservation Element

1.10.7 Light and Glare

Policies

Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.

Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Implementation Measures

Measure AA: The County shall utilize CEQA guidelines and the provisions of the Zoning Ordinance to minimize the impacts of light and glare on adjacent properties and in rural undeveloped areas.

Chapter 5: Energy Element

5.4.7 Transmission Lines

Goal

Goal 1: To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects.

Policy

Policy 5: The County should discourage the siting of above-ground transmission lines in visually sensitive areas.

Kern County Zoning Ordinance

Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)

In November 2011, Kern County approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing character of Kern County by requiring a minimal approach to outdoor lighting, recognizing that excessive illumination can create a glow that may obscure the night sky and excessive illumination or glare may constitute a nuisance. The ordinance provides requirements for outdoor lighting within specified unincorporated areas of Kern County in order to accomplish the following objectives:

- Objective 1: Encourage a safe, secure, and less light-oriented night-time environment for residents, businesses and visitors.
- Objective 2: Promote a reduction in unnecessary light intensity and glare, and to reduce light spillover onto adjacent properties.
- Objective 3: Protect the ability to view the night sky by restricting unnecessary upward projections of light.
- Objective 4: Promote a reduction in the generation of greenhouse gases by reducing wasted electricity that can result from excessive or unwanted outdoor lighting.

Kern County Development Standards

The Kern County Development Standards have specific regulations pertaining to lighting standards including the requirement that lighting must be designed so that light is reflected away from surrounding land uses so as not to affect or interfere with vehicular traffic, pedestrians, or adjacent properties.

4.1.4 Impacts and Mitigation Measures

This section describes the impact analysis relating to aesthetics for the project. It describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, where applicable.

Methodology

The project's potential impacts to aesthetics have been evaluated using a variety of resources. In general, the potential aesthetic, light, and glare impacts associated with development projects are evaluated on a qualitative basis. This visual impact assessment is being utilized to identify and assess any potential long-term adverse visual impacts on aesthetics and visual resources that might result from implementation of the project during construction and operation. This assessment is based on the approved visual assessment practices employed by the FHWA (FHWA, 2015), the Bureau of Land Management (BLM) (BLM, 1986), the U.S. Forest Service (USFS, 1995), and other federal regulatory agencies. This method includes:

- Defining the project and its visual setting by assessing the project proponent's submitted project application materials, including plans and descriptions, and reviewing Google Earth Pro aerial photographs and street-level photography, Kern County Geographic Information System (GIS) topographic and land use data, and U.S. Geological Survey (USGS) topographic data;
- Conducting a field visit in May 2022 of the project site and vicinity to document the following:
 - Project site's visual characteristics.
 - Project vicinity's visual characteristics.
 - Establish a visual characteristic baseline.
 - Location of visual (sensitive) receptors in the vicinity.
- Establishing four Key Observation Points (KOPs) within vicinity from which to evaluate potential visual impacts resulting from implementation of the proposed project.
- Preparing visual simulations of post-development views from the KOPs.
- Assessing the project's impacts to sensitive views by applying the visual quality rating system to each of the visual simulations.
- Proposing methods to mitigate any potentially significant visual impacts identified.

The evaluation of project impacts is based on professional judgment, analysis of the Kern County General Plan goals and policies related to visual resources, and the significance criteria established by CEQA

Guidelines, Appendix G. More detailed information on the methodology behind the selection of KOPs and rating visual quality is provided below.

Selection of Key Observation Points (KOPs)

KOPs were selected to represent views that would be experienced from sensitive viewpoints. KOPs are single viewpoints that appropriately reflect the impact implementation of the project would have on one or more sensitive receptors. Sensitive receptors near the project site fall into the following categories: motorists, employees, and residents. KOPs were identified based on review of available land use data, preliminary viewshed analysis, and a review of aerial maps.

The process of identifying KOPs focused on selecting viewpoints that could be used to accurately represent views from a broader range of viewpoints, particularly viewpoints from area sensitive receptors. The nature of solar fields, with large numbers of nearly identical and relatively low-lying PV panels, means that the views encountered from differing angles would often be quite similar. Sensitive receptors near the project site include motorists and viewers of the project site from rural scattered residences along local roads.

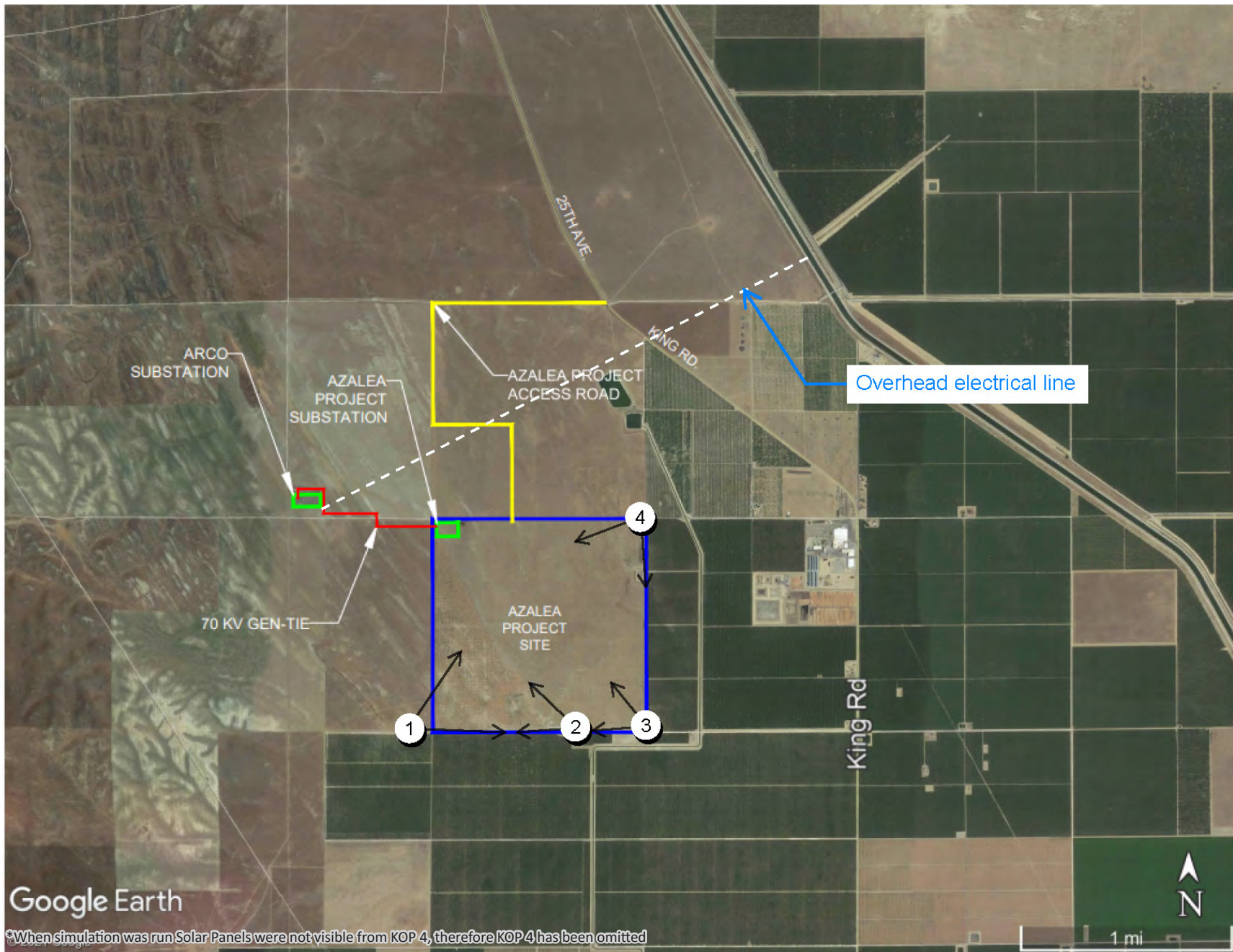
The familiarity with the view also influences how much attention is spent on the visual environment. Regular motorists may be highly familiar with the view and sometimes pay less attention; however, these motorists tend to be much more sensitive to changes in that view. People who are less familiar with the view may spend more time looking at the surrounding land but would not notice changes in the view. The majority of existing motorists are likely to be residents and employees driving to and from home.

The project site is located in a rural area. As described in Section 4.1.2, *Environmental Setting*, the nearest rural residence to the project site is located approximately 0.67 mile to the east of the northeast corner of the project site. A pistachio processing facility is also located approximately 0.75 mile east of the project site and an orchard is located 0.51 miles east of the project site. Residents, with direct views of the project site from their homes would tend to be the most sensitive to changes in the view. These residents tend to have much more familiarity with the existing viewshed and a heightened sensitivity to any visual changes within the landscape. It is unlikely that the project site is visible from the nearest residence given the distance and existing orchard partially between it. Employees of the pistachio processing facility may be able to see the project site over the orchard, which is between the facility and the project site, but are unlikely to be sensitive to the aesthetic change given that they are at the facility to work.

Five KOPs were selected for visual simulation to create post-development views that would most closely represent views that could be seen by people in the vicinity, motorists, and recreational users. One of the KOP was not used after the photos simulation and matching terrain was determined the panels would not be visible from this location. This KOP is marked as Location #4 and is still discussed below and also mapped on **Figure 4.1-1: Key Observation Point (KOP) Locations**, and described below in **Table 4.1-1: Key Observation Points**.

TABLE 4.1-1: KEY OBSERVATION POINTS

KOP	Location	Representative Sensitive Viewers
1	From west of the southern project boundary on the dirt road looking northeast toward the project site.	Workers on adjacent properties near the project site.
2	From the southern project boundary on the dirt road looking north towards the project site.	Workers on adjacent properties near the project site.
3	From the southeast project boundary at the southeast corner of the project site on the dirt road looking northwest towards the project site.	Workers on adjacent properties near the project site.
4	From the northeast corner of the project site looking southwest towards the project site.	Workers on adjacent properties near the project site.



SOURCE: Kimley-Horn Inc., 2022

FIGURE 4.1-1: Key Observation Points (KOP) Locations

Draft Environmental Impact Report
Azalea Solar Project

Simulation Preparation

Visual simulations of the project from the identified KOPs were prepared to provide a comparison of pre- and post-project conditions as well as context for qualitative description of the aesthetic changes that would result from the project. Photographs were taken during a site visit in May of 2022 and simulations were prepared by Kimley-Horn and Associates using the assumptions and methodologies listed below in **Table 4.1-2: Visual Simulation Methodology and Assumptions**, below.

TABLE 4.1-2: VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS

Photography from Key Observation Points	<ul style="list-style-type: none"> • Photos were taken on a sunny with wispy light clouds day in May of 2022. • Canon 5D digital camera with a 35 to 52 mm zoom
Visual simulation assumptions	<ul style="list-style-type: none"> • Solar modules would be up to 12 feet in height and installed in rows. • Modules on single axis tracking system were used to show the worst-case visual impact. • O&M Building(s) covering approximately 1,000 square feet with a height of 12 feet.* • Storage enclosures (similar in size to a shipping container) located in the O&M areas.* • Energy Storage Systems would be approximately 5 acres in area.* • Collection line structures up to 95 feet in height.
Methods	<p>Following data gathering phase, the process begins with a determination of proposed camera locations and/or station points. Upon review and approval of camera locations, Kimley-Horn coordinated the engineered site photography and schedules the initial site visit with County staff and/or project planner. This includes identification of reference points with GPS coordinates and specific fields of vision for each view. Concurrently, the modeling team develops an exact computer model of the proposed solar modules to illustrate elevations. Natural and finished pads, including existing and surrounding contextual elements such as streets, terrain, pads, and adjacent buildings (where applicable), were used as a reference. Upon completion of the 3D modeling phase realistic materials, maps, and textures are then applied. The next phase is assembly, during which the modeling is inserted into photographs taken during the field study using a full frame camera and camera match technology. 3D pads and boundary outlines are used to situate the modules to the proposed positions as shown on the cad provided. During this process, a computer model camera is aligned with the onsite photography to depict the project setting within each view. Lastly, a proposed landscape concept is applied (where applicable) and final artistic touches are made to ensure accuracy, and that the look and feel is consistent with the vision of the project. GPS and Camera Match Technology includes the use of a Trimble GeoXT (Sub-Meter) GPS device and a “Full Frame” digital camera for documenting coordinates at requested station points.</p>

* These project components were considered in the photo simulations but due to their positioning within the project site would not be visible from any of the KOPs.

A comparison of existing views from the KOPs with visual simulations depicting visible project features, aided in determining project-related impacts. The simulations present a representative sample of the existing landscape setting contained within the project site, as well as an illustration of how the project may look from the identified KOPs. Solar arrays are visually similar regardless of the manufacturer. Therefore, the solar arrays shown in the visual simulations are not necessarily identical to those that would be developed on the sites, but are similar enough to evaluate project impacts to aesthetics.

Rating Visual Quality

“Visual quality” is a measure of a landscape or view’s visual appeal. While there are a number of standardized methods for rating visual quality, the “Scenic Quality Rating Criteria” method utilized by the BLM is believed to be superior because it allows the various landscape elements that comprise visual quality to be easily quantified and rated with a minimum of ambiguity or subjectivity.

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

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

Based on the above criteria, views are rated numerically and a total score of visual quality can be tabulated. Based on the BLM's rating system, there are a total of 32 points possible. Views that score a total of 19 points or more are typically considered very high in visual quality. Views that score a total of 15 to 19 points are typically considered to have a high level of visual quality. Views that score a total of 12 to 15 points are typically considered to have an above average level of visual quality. Finally, views that score a total of 11 points or less are typically considered to have average visual quality. See **Table 4.1-3: Visual Quality Rating System**, for the point values associated with the various criteria.

An important premise of this evaluation method is that views with the most variety and most harmonious composition have the greatest scenic value. Another important concept is that man-made features within a landscape do not necessarily detract from the scenic value. In fact, certain man-made features that complement the natural landscape may actually enhance the visual quality. In making this determination, it is therefore important to assess project effects relative to the "visual character" of the project setting. Visual character is qualitatively defined by four primary components: form, line, color, and texture.

Projects that create a high level of contrast to the existing visual character of a project setting are more likely to generate adverse visual impacts due to visual incompatibility. Conversely, projects that create a low level of contrast to the existing visual character are less likely to generate adverse visual impacts due to inherent visual compatibility. On this basis, project modifications are quantified and evaluated for impact assessment purposes.

By comparing the difference in visual quality ratings from the baseline ("before" condition) to post-project ("after" condition) visual conditions, the severity of project related visual impacts can be quantified. However, in some cases, visual changes caused by projects may actually have a beneficial visual effect and may enhance scenic quality. The following designations are used to rank the significance of project impacts according to the pre- and post-project differences in numerical visual quality scores:

- **Potentially Significant Impact:** Any impact that could potentially lower the visual quality of an identified sensitive viewpoint by 2 points or more, and for which no feasible or effective mitigation can be identified.
- **Less-than-Significant Impact with Mitigation Incorporated:** Any impact that could potentially lower the visual quality of an identified sensitive viewpoint by two points or more, but can be reduced to less than two points with mitigation incorporated. Therefore, specific mitigation measures are provided to reduce the impact to a less-than-significant level.
- **Less-than-Significant Impact:** Any impact that could potentially lower the visual quality of an identified sensitive viewpoint by one point or less. In visual impact analysis, a less than significant impact usually occurs when a project's visual modifications can be seen but do not dominate, contrast with, or strongly degrade a sensitive viewpoint.
- **No Impact:** The project would not have an impact from an identified sensitive viewpoint. In visual impact analysis, there is no impact if the project's potential visual modifications cannot be seen from an identified sensitive viewpoint.

TABLE 4.1-3: VISUAL QUALITY RATING SYSTEM

Key Factors	Rating Criteria and Score		
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers.	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional.	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features.
	Score 5	Score 3	Score 1
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns.	Some variety of vegetation, but only one or two major types.	Little or no variety or contrast in vegetation.
	Score 5	Score 3	Score 1
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape.	Flowing, or still, but not dominant in the landscape.	Absent, or present but not noticeable.
	Score 5	Score 3	Score 1
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields.	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element.	Subtle color variations, contrast, or interest; generally mute tones.
	Score 5	Score 3	Score 1
Influence of Adjacent Scenery	Adjacent scenery greatly enhances visual quality.	Adjacent scenery moderately enhances overall visual quality.	Adjacent scenery has little or no influence on overall visual quality.
	Score 5	Score 3	Score 1
Scarcity	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc.	Distinctive, though somewhat similar to others within the region.	Interesting within its setting but fairly common within the region.
	Score 5*	Score 3	Score 1
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony.	Modifications add little or no visual variety to the area, and introducing no discordant elements.	Modifications add variety but are very discordant and promote strong disharmony.
	Score 5	Score 3	Score 1

NOTES:

* A rating greater than 5 can be given but must be supported by written justification

SOURCE: BLM 1986

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on aesthetic resources.

A project would have a significant impact on aesthetics if it would:

- a. Have a substantial adverse effect on a scenic vista;
- b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- c. In 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 publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or
- d. Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

Project Impacts

Impact 4.1-1: The project would have a substantial adverse effect on a scenic vista.

Scenic vistas are areas identified or known for high scenic quality. Scenic vistas may be designated by a federal, State, or local agency. Scenic vistas can also include an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing.

There are no local areas that are designated as scenic vistas within the vicinity of the project site. The nearest eligible scenic highway, SR-41, to the project site is located approximately 12 miles northwest of the project site. The Kern National Wildlife Refuge is located approximately 13 miles to the east of the project site. The project site is unlikely to be visible from neither SR-41 nor the wildlife refuge given the distance, topography and orchards between them. While implementation of the project would add new manmade elements to project site, the distance of the project site from SR-41 and the Kern Wildlife Refuge along with intervening topography and orchards would result in limited distant views of project components. Therefore, impacts to scenic vistas would be less than significant and no mitigation would be required.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The proposed improvements are expected to have minimal potential to adversely impact a scenic vista. The PG&E property is located approximately 13 miles from the Kern National Wildlife Refuge at its closest point. Distance and intervening topography would likely result in the PG&E Interconnection Facilities producing no noticeable impact to views from the Kern National Wildlife Refuge. Therefore, impacts to scenic vistas would be less than significant and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities, and no mitigation is required for the PG&E Interconnection Facilities.

Impact 4.1-2: The project would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

The project would not be visible from any Officially Designated State or County Scenic Highway. The closest Eligible Scenic Highway is SR-41 located approximately 12 miles northwest of the project site. Although SR-41 is designated as Eligible (E) for State Scenic Highway status, it has not yet been Officially Designated. Therefore, construction and operation of the proposed project would not change the viewshed from any Officially Designated State or County Scenic Highway and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The proposed improvements are expected to have minimal potential to damage scenic resources. The PG&E property is located approximately 12 miles from the nearest scenic highway at its closest point. Distance and intervening topography would likely result in the PG&E Interconnection Facilities producing no noticeable impact to views from a designated scenic highway. Therefore, impacts on a scenic highway would be less than significant and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities, and no mitigation is required for the PG&E Interconnection Facilities.

Impact 4.1-3: The project would, 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 publicly accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

As described in Chapter 3, *Project Description*, and above in Section 4.1.2, *Environmental Setting*, existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access

roadways, a canal and a nut processing plant. As the project is located within a nonurbanized area, the analysis below will focus on whether development of the project would substantially change the existing visual character or quality of public views of the site and its surroundings.

Construction

Construction activities associated with the project would create temporary changes in views of the project site. Furthermore, construction activities would introduce a considerable amount of heavy equipment, including backhoes, compactors, tractors, and trucks, into the viewshed of all viewer groups. During construction, there would be multiple crews working on the site with various equipment and vehicles, including special vehicles for transporting the modules and other equipment. The influx of construction vehicles, equipment, and worker vehicles would create visible contrast within the rural and primarily undeveloped (with the exception of two residences and residential accessory structures) setting of the project site. However, vehicles, equipment, and construction activity would be temporary in nature (12 months) and would be limited to active areas of construction as opposed to the entirety of the project site at the same time.

Viewers are accustomed to seeing heavy machinery associated with agriculture in the area. In addition, the visual effects associated with the presence of construction vehicles, equipment, and workers in the project area landscape would be limited in duration and would be spatially limited at any given time to the active area of construction. Therefore, impacts to existing visual character or quality of the project site and surrounding area during construction of the project would be less than significant.

Operation

In order to determine whether the project would substantially degrade the existing visual quality of the project site, this analysis compares the existing visual setting with visual simulations of the post-construction visual conditions. As described above, three KOPs were selected for visual simulation. A fourth location was originally planned but it was determined that none of the project elements would be visible from that area. These KOPs are representative of views that would be experienced from off-site viewers.

Visual simulations are provided in **Figures 4.1-2 through 4.1-4**. KOPs are described in **Table 4.1-2: *Visual Simulation Methodology and Assumptions***. Impacts associated with operation of the project would vary by viewer location and are discussed below by KOP. The rating system and impacts methodology are discussed in the “Rating Visual Quality” section above.

The solar facility would introduce solar arrays into much of the project site. Battery containers, collection lines, an O&M building, dirt or gravel access roads, and a 7-foot-high perimeter fence (6 feet of wire fence with one foot of three-strand barbed wire on top) would be visible for an estimated lifespan of over 30 years, would be visible to residents, workers at the nearby pistachio processing facility, and travelers on surrounding roadways.

The O&M facility would include a building and an unpaved parking lot, which would be constructed to provide a base for ongoing operations and maintenance at the project site. The building would house electronic controls and communication systems; provide storage space for tools, maintenance supplies, and spare parts; and provide on-site facilities for the staff.

Roads, driveways, and parking lot entrances would be constructed in accordance with Kern County improvement standards, would be consistent with existing roadways in the area, and would not greatly alter the visual landscape. Fences would be 7 feet tall (6 feet of wire fence with one foot of three-strand barbed wire on top). The battery containers and other equipment which would comprise the battery energy storage systems (BESS) could introduce industrial-looking elements into the landscape that could be visible to sensitive viewers if viewers are located in proximity to these features and if terrain, vegetation, and the proposed solar modules do not obscure views of these features. In addition, collection lines are proposed to connect the project site to existing PG&E Arco Substation.

Solar modules would be made up of individual panels that would use either fixed-tilt or tracker technology. Each module would be up to 20 feet tall and have 18 inches of clearance between the bottom and the ground.

KOP 1. Figure 4.1-2: *KOP 1: Existing and Simulated Views from the south west project boundary looking northeast toward the project site*, shows views looking northeasterly across the site. This KOP reflects views to the project site that would be experienced by people using the dirt road that delineates the southern boundary of the project site. At KOP 1, the westerly boundary of the project site is located 0.1 miles away. The pre-development views from KOP 1 shows that the landscape is relatively flat with minimal topographic relief dipping dips slightly to the east before rising into low lying hills. From the photo location, the dirt road is visible and the adjacent properties are delineated by a barbed wire fence. Tumbleweeds and other vegetation is visible at the base of the fence. The interior of the site and entire middle ground of the site is covered with brownish low-lying vegetation, no shrubs or trees are seen. The background consists of a lightly elevated hill that meets the sky at the horizon. Beyond this point, there are no distant views afforded. No development is shown within this viewpoint. The post-development view from KOP 1 (See **Figure 4.1-2**) would include faint modifications (i.e., solar arrays) that would be located low in the middle ground landscape. The solar panels and associated elements would be minimally visible from KOP 1, and only appear below the skyline in a slight depressional area before the low rising hill in the background. Panels would not be visible in the foreground or midground and the panels would not substantially contrast with the existing muted earth tones within the project site. As discussed in **Table 4.1-4: Visual Quality Rating Analysis – KOP 1**, further below the predevelopment score is 7, and the post-development score is 6. Since the difference in scores would be 1 point, visual impacts from KOP 1 are less than significant.

KOP 2. Figure 4.1-3: *KOP 2: Existing and Simulated Views from the Southern boundary and Dirt Road Looking Northwest towards the Project Site*, shows views from the adjacent dirt road looking northwest toward the project site. This KOP reflects views to the project site that would be experienced by people using the dirt road that delineates the southern boundary of the project site. The pre-development views from KOP 2 depicts broad and relatively flat terrain but with gently rolling low lying hills. The project site in this area is covered with brown vegetation and bare ground. This is characteristics of both the foreground and midground areas. Areas with tumbleweeds and brushy vegetation, however, are growing along the base of the existing barbed wire fence lines. To the south of the dirt road on the adjacent property, there is a portion of an orchard visible south of the dirt road that continues westerly until it is out of view. In the background the coast range is visible rising beyond slight elevation rise of the western portion of the project site. The coast range hills appear darker grey and brown in color in contract to the brown and tan colors that dominate the foreground and midground of the project site. The post-development view from KOP 2 (See **Figure 4.1-3**) shows the solar array within a slight depressional area in the midground. The array is not immediately visible in the foreground and would not be visible against the horizon of the westerly hills on the project site and would not visually contrast with the rise of the distant Coast Range. The solar arrays

would not interrupt the long view across the valley terrain to the northwest but would appear darker in color to than the project site but would be a similar color to the Coast Range. As discussed in **Table 4.1-5: Visual Quality Rating Analysis – KOP 2**, the pre-development score is 8, and the post-development score is 7. Since the difference in scores would be 1 point, visual impacts from KOP 2 are less than significant.

KOP 3. Figure 4.1-4: KOP 3: Existing and Simulated Views from the Southeastern Project Boundary Northwest towards the Project Site, shows views from the adjacent dirt road looking northwest toward the project site. This KOP reflects views to the project site that would be experienced by people using the dirt road that delineates the southern boundary of the project site. The pre-development views from KOP 3 depicts broad and gently rolling terrain. The project site in this area is covered with mostly brown vegetation with sparse green patches and interspersed bare ground. This is characteristics of both the foreground and midground areas. Areas with tumbleweeds and brushy vegetation are visible in the foreground along the barbed wire fence lines. There also is a patch of both dried and green vegetation in the midground. To the south of the dirt road on the adjacent property, there is a portion of an orchard visible south of the dirt road that continues westerly until it is out of view. In the background the coast range is visible rising beyond slight elevation rise of the western portion of the project site. The colors of the coast range in the picture appear darker grey and brown in contract to the brown and tan colors that dominate the foreground and midground of the project site. The post-development view from KOP 3 shows the solar array within the foreground and midground, and into the background. The array partially blocks views of the transition between the hills in the westerly portion of the project site and the transition of views and color delineation to the rise of Coast Range. From this view, however, the array does not rise above the horizon of block views of the top of the Coast Range. This view would interrupt the long view across the project site to the northwest and would stand in contract to the existing colors and landscape. As discussed in **Table 4.1-6: Visual Quality Rating Analysis – KOP 3**, the pre-development score is 13, and the post-development score is also 11. Since the difference in scores would be 2 points, changes and impacts to the visual environmental would be less than significant as experienced from KOP 3.



Existing



Proposed

FIGURE 4.1-2: KOP 1: Existing and Simulated Views from the south west project boundary looking northeast toward the project site
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TABLE 4.1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1

Sensitive Receptor(s): Workers located near the project site.				
Pre-development and post-development conditions are depicted in Figure 4.1-2.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	1	1	0	Less than Significant
<i>Explanation:</i>	Relatively flat terrain with slightly rolling hills covered with low-lying vegetation and no mountainous terrain in the background.	The flat topography of the area would not be noticeably modified by project development.		
<i>Detail:</i>	Flat landforms with slight undulation and rises dominate the foreground, middle ground, and background of the visible landscape. The low height of solar arrays on the project site would not obstruct or substantially interrupt views of any of the existing hills or skyline. Views would not be substantially changed There would be a less than significant impact to landforms resulting from project operations.			
Vegetation	1	1	0	Less than Significant
<i>Explanation:</i>	Low growing brown vegetation interspersed with brown dirt.	Minimally visible vegetation would be removed from the solar sites in the middle ground, but effects would be obscured by distance.		
<i>Detail:</i>	Both the pre- and post-development views show the ground surface covered with low lying brown vegetation and bare ground. Due to the distance of the project development, changes would be minimal due to the distance. Contrast associated with vegetation removal would not be prominent, and impacts would be less than significant.			
Water	1	1	0	No Impact
<i>Explanation:</i>	No water is present on the site or in the vicinity.	Project development would not introduce water to or remove water from the visible landscape.		
<i>Detail:</i>	Water features are not included in pre- or post-development views. No impacts to water features would occur.			
Color	1	1	0	Less than Significant
<i>Explanation:</i>	The project site is dominated with shades of brown from the dry vegetation and bare ground.	Solar arrays would display a low and thin black horizontal band in the middle ground but due to the distance would present minimal contrast with the muted earth tones.		

TABLE 4.1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1

Sensitive Receptor(s): Workers located near the project site.				
Pre-development and post-development conditions are depicted in Figure 4.1-2.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
<i>Detail:</i>	Muted earth tones of brown from the vegetation and bare ground dominate the foreground, middle ground, and background. Slightly visible solar arrays would introduce a simple horizontal band of black color to the far middle ground that would be easy to overlook. No changes to the horizon or visible sky would occur. Impacts associated with color would be less than significant.			
Adjacent Scenery	1	1	0	Less than Significant
<i>Explanation:</i>	With the exception of the orchard, the adjacent areas have the same or similar visual elements as the project site.	The project would not affect the visual elements of any of the adjacent areas.		
<i>Detail:</i>	The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. Less-than-significant impacts to views of adjacent scenery would result.			
Scarcity	1	1	0	Less than Significant
<i>Explanation:</i>	The available view is broad. There are no unique aspects from this view. Similar views exist throughout the area.	Views would be slightly modified by solar development in the middle ground.		
<i>Detail:</i>	Existing views offered from the KOP are typical of the area. Visible features are not particularly unique or unusual. Alteration of the landscape to accommodate the project would not result in visually significant impacts to view scarcity.			
Cultural Modifications	1	0	1	Less than Significant
<i>Explanation:</i>	Cultural modifications include installation of the solar array.	Project development would add low-profile solar arrays.		
<i>Detail:</i>	Existing cultural modifications are not particularly prominent, and the features are compatible with rural elements in the surrounding area. Project components would be added to the landscape, but due to the low form and dark color of solar arrays and the faint lines associated with the collection line, the addition of cultural modifications to the middle ground of KOP 2 would result in less-than-significant impacts.			
Totals:	7	6	1	Less than Significant



Existing



Proposed

TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2

Sensitive Receptor: Workers using the dirt road to access other properties. Pre-development and post-development conditions are depicted in Figure 4.1-3.				
Rated Feature	Pre-development Score	Post-development Score	Difference in Scores	Impact Significance
Landform	2	1	0	Less than Significant Impact
<i>Explanation:</i>	Broad and flat terrain with slightly hills in the foreground and middle ground and the Coast Range in the background.	Project development would not visibly modify the area's topography as viewed from the KOP.		
<i>Detail:</i>	The pre- and post-development view is dominated by flat but slightly rolling valley terrain in the foreground and middle ground with the Coast Range in the background. The project would moderately change the viewshed as seen from this KOP but changes would not be not substantially modify landforms in the view.			
Vegetation	1	1	0	Less than Significant Impact
<i>Explanation:</i>	Low growing and dry vegetation and bare ground covers the foreground and continues into the midground. Specific vegetation is not visible in the background.	Vegetation removal would be obscured and minimized due to the intervening fence distance and viewing angle.		
<i>Detail:</i>	Removal of vegetation in the middle ground due to project development would be minimally visible. Solar arrays installed on the project site would replace this vegetation but not substantially change detectable vegetative patterns. The resulting contrast would not be substantial and impacts to vegetation would be less than significant.			
Water	1	1	0	No Impact
<i>Explanation:</i>	No water is visible on site or in the surrounding area.	Project development would not introduce water to or remove water from the visible landscape.		
<i>Detail:</i>	Water features are not included in pre- or post-development views. No impacts to water features would occur.			
Color	2	1	0	Less than Significant Impact
<i>Explanation:</i>	Shades of yellow, green and brown are display by soil and vegetation. Green is visible in the adjacent orchard but the site is dominated by tan and brown vegetation and earth. The Coast Range in the background is darker grey and brown, which give way to the sky above.	The dark color of solar arrays would be visible but would not substantially contrast with the drab tones displayed by terrain and minimal vegetation in the foreground, midground, and background of the project site. The Project would have a minimal visual impact and color contrast, which creating a change would not be substantially different from this KOP.		

TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2

Sensitive Receptor: Workers using the dirt road to access other properties. Pre-development and post-development conditions are depicted in Figure 4.1-3.				
Rated Feature	Pre-development Score	Post-development Score	Difference in Scores	Impact Significance
<i>Detail:</i> Pre- and post-development views are and would continue to be dominated by earth tones. The dark line displayed by solar arrays would be noticeable in views, but would not stand in substantial contrast to the existing site or to the low lying Coast Range in the background view.				
Adjacent Scenery	2	2	0	Less than Significant Impact
<i>Explanation:</i>	Views of the existing site terrain are enhanced by the orchard to the south and views of the Coast Range to the south.	The orchard and Coast Range would remain visible. The installation of the solar array would not block or obscure views of either of these features.		
<i>Detail:</i>	The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. Impacts to views of adjacent scenery would be less than significant result.			
Scarcity	1	1	0	Less than Significant Impact
<i>Explanation:</i>	The extent of the broad view is not limited by existing site topography or features. There are no particularly unique or unusual aspects in the view, other than the views of the Coast Range but which are similar throughout the area.	The middle ground would be modified by the introduction of solar arrays, but they would be marginally visible at a distance. In addition, there are other solar developments in the region and because views of the project site are similar to other, views are not scarce.		
<i>Detail:</i>	The view from Rosamond Boulevard is typical of views available throughout the area and landforms and vegetation are not particularly unique or unusual. Landscape modification resulting from project development would result in minimal impact to view scarcity.			
Cultural Modifications	0	0	0	No Impact
<i>Explanation:</i>	Cultural modifications include roads, an orchard, use of the project site for grazing and fencing.	Project development would add low-profile and dark solar arrays visible from this part of the project area. The solar arrays would have a minimal visual impact.		
<i>Detail:</i>	The introduction of solar arrays would be evident in the midground of the project site but would not have a substantial visual impact in relation to cultural modifications. Therefore, the addition of cultural modifications to the middle ground of KOP 2 would be less than significant.			
Totals:	8	7	1	Less than Significant Impact



Existing



Proposed

TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3

Sensitive Receptor: Workers located near the project site				
Pre-development and post-development conditions are depicted in Figure 4.1-4 .				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	3	2	1	Less than Significant Impact
<i>Explanation:</i>	Broad but gently rolling terrain in the foreground and midground with the Coast Range rising above the hills in the project background.	Project development would not substantially modify the project sites topography and the panels would follow similar contours as viewed from the KOP. The solar arrays, however, would block views of the midground and background terrain.		
<i>Detail:</i>	The pre- and post-development view is dominated by rolling terrain in the foreground, and midground with the Coast Range rising above and visible over the project site to the west. The arrays would be immediately visible in the foreground and midground and change some of the views of the existing landforms. The project would not substantially alter views of the Coast Range or block the horizon.			
Vegetation	2	2	0	Less than Significant Impact
<i>Explanation:</i>	The site is predominantly low growing dry vegetation and bare ground, but some low growing shrubs area visible in the foreground and midground.	Vegetation removal would be minor as there is little vegetation within the project site. The views of the darker vegetation on the foothills would largely remain visible and minimally obscured due to the intervening panels.		
<i>Detail:</i>	Removal of vegetation in the middle ground due to project development would be alter the vegetative patterns of the site and block some views of the colors of vegetation and the bare ground in the distance. Vegetative patters and associated colors of the Coast Range would be minimal and only block the northerly portion of the view. The resulting contrast would be noticeable, but due to the minimal visual quality, impacts to vegetation would be less than significant.			
Water	1	1	0	No Impact
<i>Explanation:</i>	No water is visible on site or in the surrounding area.	Project development would not introduce water to or remove water from the visible landscape.		
<i>Detail:</i>	Water features are not included in pre- or post-development views. No impacts to water features would occur.			

TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3

Sensitive Receptor: Workers located near the project site				
Pre-development and post-development conditions are depicted in Figure 4.1-4 .				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Color	2	2	0	Less than Significant Impact
<i>Explanation:</i>	Shades of yellowish and brown vegetation and bare ground dominate the foreground, with minor amounts of interspersed green plants. The foreground is characterized by tumbleweeds along the fence line and the background is darker brown and grey within the foothills.	The color and context of the foreground would remain as the project fence line and solar panels are located starting approximately 75 feet from the roadway and property line. The panels would completely block the midground views of the ground and minimal vegetation. The panels would partially obscure the lowest portions of the foothills but would not extend into the skyline. Color contrast would not be substantially changed with project operation.		
<i>Detail:</i>	Pre- and post-development views are and would continue to be dominated by earth tones. The dark line displayed by solar arrays would be noticeable in views but would be similar in tone to the color displayed by foothills in the background.			
Adjacent Scenery	2	1	1	Less than Significant Impact
<i>Explanation:</i>	Views of the orchard to the south, foothills to the west and additional undeveloped terrain to the northeast and east are enhanced by hills and mountains to the south.	Hills and mountains would remain visible with only the lowest portions being blocked. The project, however, would not block views of adjacent properties from this vantage point.		
<i>Detail:</i>	The project would not substantially obstruct, or interrupt views of adjacent scenery but would partially obscure views of the foothills. These impacts, however, are less than significant as most of the hills would remain visible and horizon would not be blocked.			
Scarcity	1	1	0	Less than Significant Impact
<i>Explanation:</i>	The views to the west and the foothills, and those of the orchard and undeveloped properties are common in the project area as well as the localized region. There are no particularly unique or unusual aspects in the view, and as discussed, similar views are available elsewhere.	The middle ground would be modified by the introduction of solar arrays but these modifications would not be substantial in consideration of reducing the availability of other similar views in the areas. While the project introduces a different visual element, it would not create a scarcity in the existing types of views.		

TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3

Sensitive Receptor: Workers located near the project site				
Pre-development and post-development conditions are depicted in Figure 4.1-4 .				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
<i>Detail:</i> The view from the roadway is typical of views available throughout the area and landforms and vegetation are not particularly unique or unusual. Landscape modification resulting from project development would change the visual environmental but impacts would be less than significant.				
Cultural Modifications	2	2	0	Less than significant.
<i>Explanation:</i>	Cultural modifications include dirt roads, an orchard, fences, plowed/disturbed fields, and grazed areas.	The project would introduce new cultural modifications to include new fencing, solar panels, and other electrical equipment and infrastructure.		
<i>Detail:</i>	A barbed wire fence is visible on the northerly side along the dirt road. The introduction of solar arrays would be evident in the middle ground and introduce a new cultural structural element. While changes would occur, the differences in comparison to the overall visual context would be less than significant.			
Totals:	13	11	2	Less than Significant Impact

Factors Reducing Visual Impacts

The following attributes of the project and elements of the existing conditions would reduce visual impacts of the project:

- The project site is generally flat and would reduce the need for grading and visible alteration of landforms.
- The lack of scenic designation of local roads in the immediate project area reduces viewer sensitivity and expectations for scenic landscapes.
- Solar panels, the primary feature of the project, would cover most of the land on the site and would generally be 20 feet in height or less. Therefore, solar panels would not block long-distance views and would be diminished when viewed from 0.5 miles or farther.
- Solar panels do not create significant levels of glare, as explained in Impact 4.1-3, below.
- Minimal onsite lighting would be required during operations, as explained in Impact 4.1-4, below. Facilities would operate at night however, regular operation and maintenance activities would not occur at night, and no regular nighttime staffing would be required.

Summary

As shown in **Tables 4.1-4** through **4.1-6**, implementation of the project would result in changes to existing views and result in visual impacts to the existing aesthetic quality and character of the site and surrounding area. As shown in the visual simulations, while much of the existing viewshed would remain, the new solar development would be replace the current undeveloped but disturbed project site. New darker and linear arranged solar panels would replace areas with mostly bare ground consisting of muted earth tones and brown vegetation interspersed with small green plants. The effects of the installation of the solar arrays as viewed from off-site areas would result in a visual conflict with the adjacent undeveloped land. Further, the introduction of thousands of solar panels, the O&M facilities, the energy storage facilities, and the collection lines would increase the footprint of solar and electrical transmission development in the region. Accordingly, the project would introduce additional manufactured elements where they do not currently dominate the landscape, resulting in potentially significant aesthetic impacts.

Mitigation Measures MM 4.1-1 through MM 4.1-3 would reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, providing privacy fencing, reducing the visibility of project features, and ensuring that the site is kept free of debris and trash. Native vegetation would be left in place around the proposed project area where feasible, allowing for a natural screening of project components. Furthermore, the color treatment of buildings would help these components to better blend in with the natural landscape and would reduce impacts to less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The PG&E property is already developed with an electrical substation. The modification of the PG&E Arco Substation and electric transmission lines would develop improvements and new interconnection-related components such as additional control equipment on property that is already developed with electrical transmission facilities. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. The PG&E Arco Substation modifications would not substantially change the rural agricultural character of the site or degrade the existing visual character or quality of the PG&E property or the property with the access roads or existing electrical transmission lines. Therefore, impacts on the existing visual character would be less than significant and no mitigation would be required.

Mitigation Measures

- MM 4.1-1:** Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County Planning and Natural Resources Department. The program shall include, but not be limited to the following:
- a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities.
 - b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for

additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.

- c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.
- d. Trash and food items shall be contained in closed secured containers at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.

MM 4.1-2: Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the Kern County Planning and Natural Resources Department, that will ensure all project facilities including operations and maintenance buildings, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.

MM 4.1-3: Wherever possible, within the proposed project boundary the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.

- a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to re-vegetate with the existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting.
- b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, and (4) a clear prohibition of the use of toxic rodenticides.
- c. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish re-vegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time).

- d. Vegetation/ground cover shall be continuously maintained on the site by the project operator.
- e. The re-vegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for each of the three years. Should a 75% rate not be feasible through consultation with a qualified botanist, evidence of such shall be submitted to Kern County Planning and Natural Resources Department and an appropriate coverage rate shall be established. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.

Level of Significance after Mitigation

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Arco Substation modifications, and no mitigation is required for the Arco Substation modifications.

Impact 4.1-4: The project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

Regarding night lighting and daytime glare conditions, “light” refers to artificial light emissions, or the degree of brightness, generated by a given source. Regarding glare conditions, the Illuminating Engineering Society of North America (IES, 2000) defines “glare” as the sensation produced by luminance in the visual field that is sufficiently greater than the luminance to which the eye has adapted to cause annoyance, discomfort, or loss of visual performance and visibility.

Construction

Lighting

According to the County’s Noise Ordinance, construction is allowed during the hours of 6:00 a.m. to 9:00 p.m. Monday through Friday and 8:00 a.m. to 9:00 p.m. on weekends. Construction of the project would generally occur during daytime hours; however, non-daylight hours may be necessary at times to make up for unanticipated schedule delays or to complete critical construction activities. In the event that work is performed between the hours of 9:00 p.m. to 6:00 a.m., construction crews would use minimal illumination in order 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. During construction, dusk-to-dawn security lighting would be required for the temporary construction staging area, parking area, construction office trailer entries, and project site access points. Lighting is not planned for typical construction activities because construction activities would occur primarily during daylight. Per Mitigation Measure MM 4.1-5, any nighttime construction would use lighting designed to provide the minimum illumination needed, thereby minimizing adverse impacts on any nearby residents. As a result, construction of the project would result in less-than-significant impacts to nighttime views.

Glare

Most of the proposed construction activities are planned to occur during daylight hours. Increased truck traffic and the transport of the solar arrays and construction materials to the project site and transmission lines would temporarily increase glare conditions during construction. However, this increase in glare would be minimal and temporary. Construction activity would occur on focused areas of the project site as construction progresses and any sources of glare would not be stationary for a prolonged period of time. Additionally, the surface area of construction equipment would be minimal compared to the scale of the site. Therefore, construction of the project would not create a new source of substantial glare that would affect daytime views in the area and impacts would be less than significant.

Operation

Lighting

As described in Chapter 3, *Project Description*, night lighting will be installed for security and maintenance needs at the main access entrances, O&M Building(s), substation (as necessary), and major equipment enclosures. The O&M Building(s) and any substation lighting will be controlled by motion sensors, by a control switch accessible within the site control center or as required by code. Maintenance of the plant may be necessary during nighttime hours. In this event, portable, directional lighting would be utilized for the work areas. The solar field would not require lighting. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Additionally, lighting would be directed downward and shielded to focus illumination on the desired areas only and to minimize light trespass in accordance with applicable County requirements. Potential operational impacts associated with new sources of lighting at the solar sites would be minimized through compliance with applicable development standards pertaining to lighting, including Chapter 19.81 (Dark Skies Ordinance), as required with implementation of Mitigation Measure MM 4.1-4, which states that projects would be designed to provide the minimum illumination needed to achieve safety and security objectives. Therefore, implementation of Mitigation Measure MM 4.1-4 and compliance with applicable local development standards and regulations pertinent to lighting would minimize the potential for light trespass onto adjacent properties and roads, and impacts would be less than significant.

Glare

Potential new sources of glare would be produced by sunlight reflecting off the glass surfaces of the solar modules. Although solar facility glare potential is much lower than is commonly perceived, solar panels have the potential to create some glare. Although the project may produce glare, it is not expected to cause extreme visual discomfort or impairment of vision for residents because the panels are designed to absorb as much sunlight as possible and, therefore, would have minimal reflectivity. Similarly, and also due to their low reflectivity, the panels would not be expected to cause visual impairment for motorists on area roadways. This is because local motorists would pass well under the angle of refraction (i.e., less than 30 degrees). Effects on eastbound motorists would likely be greatest in the early evening hours, when the sun is at its lowest arc in the western horizon. Glare would have its greatest impact on westbound travelers in the early morning hours, when the sun is rising in the east. To reduce glare potential, the project would be required to implement Mitigation Measures MM 4.1-5 through MM 4.1-6, which require the use of non-reflective and glare-minimizing materials. With implementation of these mitigation measures, impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The PG&E property is already developed with an electrical substation. The modifications of the PG&E Arco Substation would develop improvements and new interconnection-related components such as additional control equipment on property that is already developed with electrical transmission facilities. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. The substation modifications would not result in a significant increase in light and glare from the PG&E property or the property with the access roads or existing electrical transmission lines. Therefore, impacts from light and glare would be less than significant and no mitigation would be required.

Mitigation Measures

- MM 4.1-4:** Prior to commencement of project operations of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Staff that the project site complies with the applicable provisions of the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.
- MM 4.1-5:** Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department.
- MM 4.1-6:** Prior to commencement of project operations of the solar facility, the project operator shall demonstrate that all onsite buildings utilized non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-4 through MM 4.1-6, impacts would be less than significant. Impacts would be less than significant for the PG&E Arco Substation modifications, and no mitigation is required for the PG&E Arco Substation modifications.

Cumulative Setting Impacts and Mitigation Measures

As shown in **Table 3-4: Cumulative Project List**, there are three projects within six mile of the project site including one solar energy storage facility. Additional solar projects in both the valley and desert in Kern County comprise more than 60,000 acres of land. As with the other listed projects, solar facilities have and /or will modify the open valley character of the project region and result in the reduction of visual quality. Although limited in the surrounding area, when combined with existing and/or proposed solar facilities, the

project would increase the footprint of solar development such that cumulative impacts to views and visual quality would occur. For example, previously unobstructed (or minorly obstructed) views of hillsides and mountains, or uninterrupted views of agricultural lands along the I-5 corridor, would be interrupted and modified as solar developments, including dark solar panels and vertical substation, switchyard, and electrical transmission facilities, are constructed and come online. View impacts associated with these existing and proposed developments would persist throughout the operational lifespan of projects. The size and scope of already existing development of more than 60,000 acres of solar projects would be increased by the proposed project, and there would be cumulative impacts to aesthetics when considered together with the project.

The project would result in significant and unavoidable impacts related to visual character despite implementation of mitigation. While other projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural agricultural area to solar energy production uses cannot be mitigated to a degree that impacts are no longer significant. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6, the project's contribution to significant impacts associated with visual character in the San Joaquin Valley would be cumulatively significant and unavoidable.

PG&E Arco Substation Modification and Electric Transmission Interconnection The PG&E property is already developed with an electrical substation. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The modification of the existing Arco Substation and Interconnection Facilities would develop improvements and new interconnection-related components such as additional control equipment on property that is already developed with electrical transmission facilities. The Arco substation Interconnection Facilities would not substantially change the visual character of the substation site, nor increase the amount of lighting on-site nor glare on-site during construction and operation. Cumulative impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.1-1 through MM 4.1-6.

Level of Significance after Mitigation

With implementation of MM 4.1-1 through 4.1-6, cumulative impacts would be significant and unavoidable for the project. Cumulative impacts would be less than significant for the PG&E Arco Substation modifications. No mitigation measures are required for the PG&E Arco Substation modifications.

Section 4.2

Agriculture and Forestry Resources

4.2.1 Introduction

This section of the EIR describes the affected environment and regulatory settings for agriculture and forest resources for the project. It also describes the impacts on agricultural and forest resources that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. This section is based, in part, on information provided in the *Agricultural Conversion Study* (2021) for Kern County Azalea Solar Energy Project (project) prepared by the Surf to Snow Environmental Resource Management, Inc. (S2S) located in Appendix B of this EIR.

4.2.2 Environmental Setting

Regional Setting

Kern County covers approximately 8,163 square miles (5,224,258 acres) including 1,384 square miles (885,957 acres) of harvested agricultural land and approximately 2,889 square miles (1,849,266 acres) of grazing land. According to the 2019 Kern County Agricultural Crop Report, agriculture in Kern County was worth approximately \$7.6 billion in 2019, which is an increase of 2 percent from the 2018 crop value (7.4 billion). The top five commodities for 2019 were almonds, grapes, citrus, milk, and pistachios, which made up more than \$5.5 billion (72 percent) of the total value, with the top twenty commodities making up approximately 95 percent of the total value (Department of Agriculture and Measurement Standards, 2019).

Kern County is a growing population and like many agricultural based jurisdictions, must balance urbanization and the loss of farmland. The most recent data from 2016 – 2018 published by the California Department of Conservation (CDOC) provides the acres of prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance that have been converted to a non-agricultural use. These values are shown in **Table 4.2-1: Kern County Farmland Conversions**, below.

TABLE 4.2-1: KERN COUNTY FARMLAND CONVERSIONS

Agricultural Designation	Total Acres 2016	Total Acres 2018	Acres Lost	Acres Gained	Total Acres Changed	Net Acres Changed
Prime Farmland	579,297	573,935	7,017	1,655	8,672	-5,362
Farmland of Statewide Importance	209,484	208,323	3,566	2,405	5,971	-1,161
Unique Farmland	91,321	91,768	1,915	2,326	4,277	447
Farmland of Local Importance	0	0	0	0	0	0
Important Farmland Subtotal	880,102	874,026	12,498	6,422	18,920	-6,076
Grazing Land	1,849,267	1,854,641	6,346	11,720	18,066	5,374
Agricultural Land Subtotal	2,729,369	2,728,667	18,844	18,142	36,986	-702

Source: CDOC, 2018

As shown in **Table 4.2-1** between 2016 and 2018 prime farmland has decreased by approximately 5,362 (0.92%), farmland of statewide importance as decreased by approximately 1,161 acres (0.55%), unique

farmland has decreased by approximately 447 acres (0.4%), farmland of local importance remains at zero acres within the County, and total CDOC designated farmland has decreased by approximately 6,076 acres (0.69%). At the same time, grazing land has increased by approximately 5,374 (0.2%). According to Kern Council of Governments in their *Regional Growth Forecast* report (2019), it is estimated that the total population of Kern County will reach approximately 1,227,200 individuals in 2050, growing from 2021's population of approximately 914,193 (DOF, 2021). The anticipated growth in population will most likely decrease the amount of agricultural land in Kern County even further. However, it is important to note, the conversion of agricultural land is affected by numerous factors other than population growth and urban development. Actual production is dependent on commodity prices, water prices and supply, labor, the proximity of processing and distribution facilities, and pest management. Factors such as weather, trade agreements, and labor disputes can also affect decisions regarding what crops are grown and which lands go in and out of production. Most conversion of prime farmlands or farmland of statewide importance, or other agricultural lands is occurring within the planned development footprint of Metropolitan Bakersfield. Very little conversion of the most productive agricultural lands has occurred in outlying areas of the County.

Local Setting

Project Site Designation

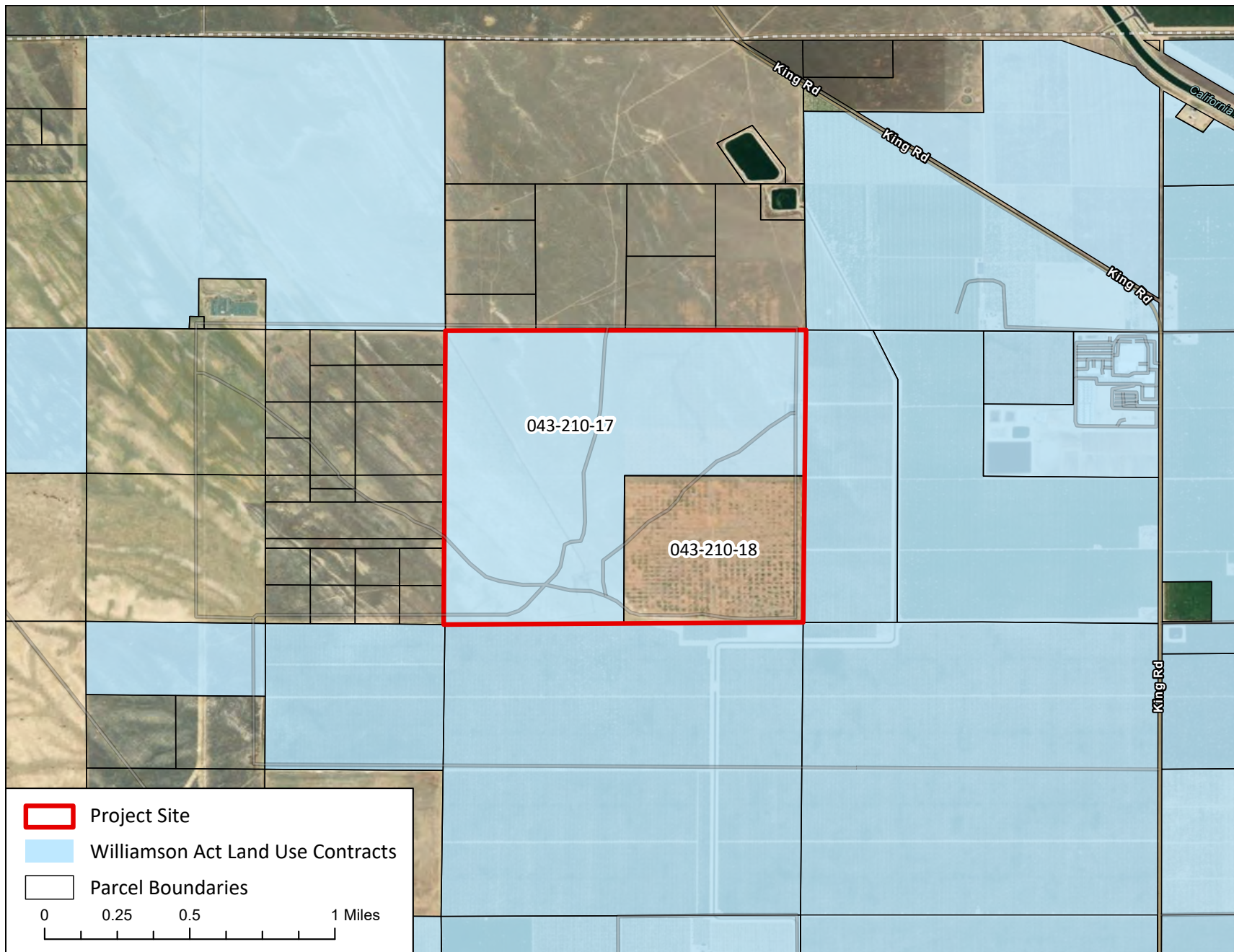
The Site is located in an unincorporated agricultural area of northwestern Kern County, it is gently sloping, vacant, and undeveloped parcels of land covered with sparse to moderately dense non-native vegetation currently used for grazing. There are no buildings on site. The project site is bordered to the north and west by vacant parcels used for dry farming and grazing, and to the South and East by parcels used for agriculture (figs, pistachios, and almonds). Research into historical land use of the area indicates that from the early 1900s through the early 2000s, the Site was largely open area periodically used for livestock grazing. In the late 1960s or early 1970s, a PG&E power substation and associated transmission lines were constructed on two of the proposed Site's parcels (Assessor's Parcel Number (APN) 043-210-27 and -28). Orchards were planted east and south of the Site in the late 1960s/early 1970s. By the 2000s, - including the current time, the Site is also used for occasional dry farming (S2S, 2021).

The project site is located within an area that has historically been used for crop production, and approximately 480 acres, one parcel within the projects boundaries, is subject to active Williamson Act Land Use Contracts, as outlined in **Table 4.2-2: Williamson Act Land Use Contract Cancellations**, and shown in **Figure 4.2-1: Williamson Act Land Use Contracts**. The project site is located within the boundaries of Agricultural Preserve No. 1, however as depicted in **Figure 4.2-2: FMMP Designations and Agricultural Preserve Boundaries**, the project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance.

TABLE 4.2-2: WILLIAMSON ACT LAND USE CONTRACT CANCELLATIONS

WALUC Cancellation Number	Kern County Recorded Document Number	Original Contract Date	Status	APN(s)	Acreage to be removed
		2/18/1970	Active	043-210-17	480

NOTES: WALCU = Williamson Act Land Use Contract
APN = Assessor's Parcel Number



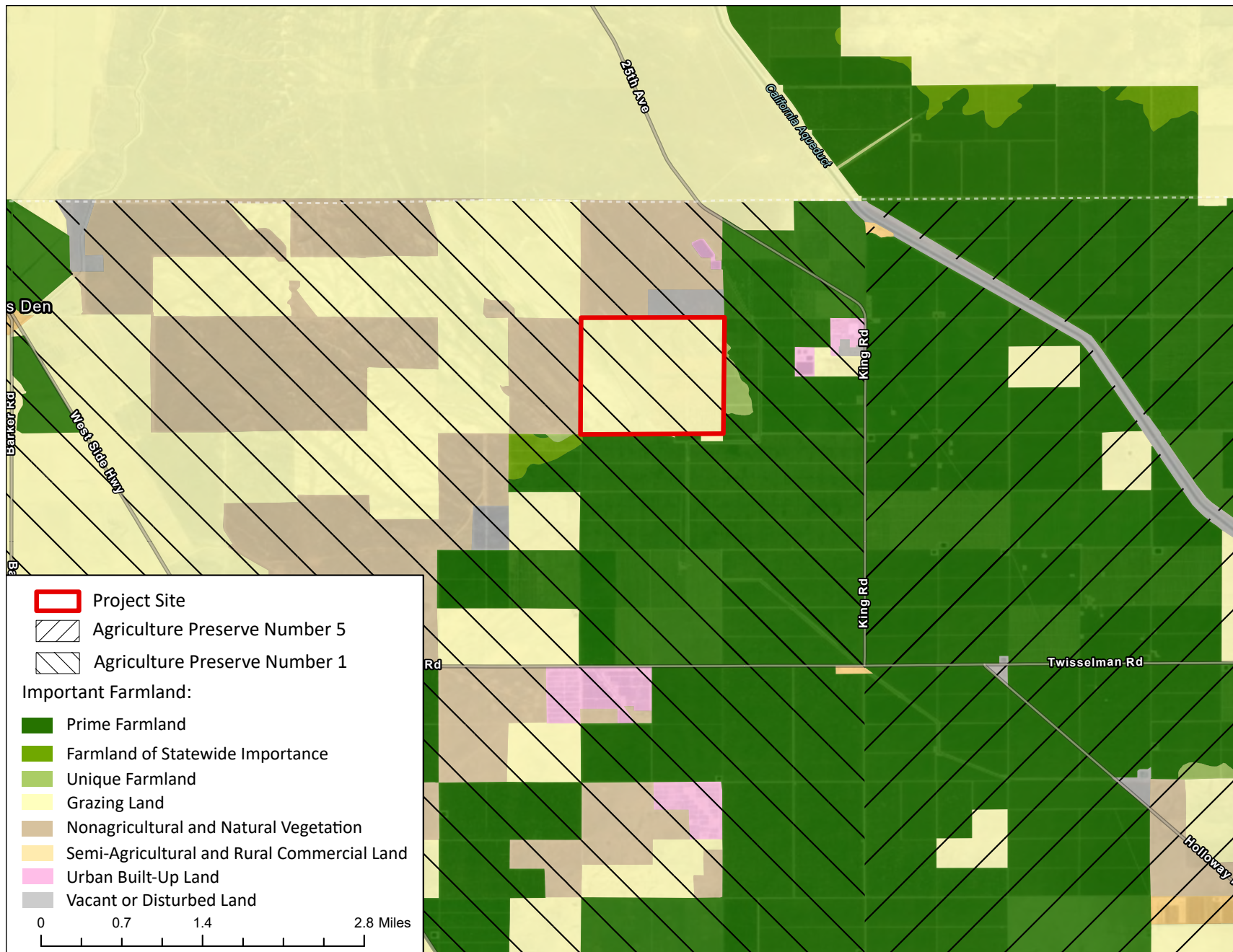
SOURCE: ArcGIS Pro, 2021

FIGURE 4.2-1: Williamson Act Land Use Contracts

Draft Environmental Impact Report
Azalea Solar Project



Not to scale



SOURCE: CDOC, 2018, ArcGIS Pro, 2022

FIGURE 4.2-2: FMMP Designations and Agricultural Preserve Boundaries

Draft Environmental Impact Report
Azalea Solar Project



Not to scale

4.2.3 Regulatory Setting

Federal

Farmland Protection Policy Act (FPPA) (7 United States Code [USC] Section 4201)

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

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

The FPPA does not authorize the Federal government to regulate the use of private or nonfederal land or in any way affect the property rights of owners. Projects are subject to FPPA requirements if they irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by a Federal agency or rely on assistance from a Federal Agency (Natural Resources Conservation Service [NRCS], 2019).

State

California Department of Conservation (DOC), Division of Land Resource Protection

The DOC applies the NRCS soil classifications to identify agricultural lands. These agricultural designations are used in planning for the present and future of California’s agricultural land resources. The DOC uses a minimum mapping unit of 10 acres; parcels that are smaller than 10 acres are absorbed into the surrounding classifications.

The list below describes the categories mapped by the DOC (DOC California Important Farmland Finder, 2018b) through the FMMP. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as “farmland.”

- **Prime Farmland.** Farmland that has the ideal combination of physical and chemical features. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields and long-term agricultural production. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

- **Farmland of Statewide Importance.** Farmland that is similar to Prime Farmland but with minor shortcomings, such as greater slopes or lower moisture content. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland.** Land with lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include land that supports non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been used for crops at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance.** Land that is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups with an interest in grazing activities.
- **Urban and Built-Up Land.** Land that is developed with structures that have been built to a density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land supports residential, industrial, commercial, institutional, public administrative uses; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment facilities; water control structures; and other developed uses.
- **Other Land.** Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Undeveloped and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act (California Government Code Section 51200-51297.4), and is applicable to specific parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under a Williamson Act contract. The Williamson Act program is administered by the DOC, in conjunction with local governments that administer the individual contract arrangements with landowners. Participation in the Williamson Act program is dependent on County adoption and implementation of the program and is voluntary for landowners (DOC, 2022a).

Under the Williamson Act, a landowner commits the parcel to a 10-year period, during which time no conversion out of agricultural use is permitted. In return, the land is taxed at a rate based on the actual use (i.e., agricultural production), as opposed to its unrestricted market value. Each year the contract automatically renews unless a notice of nonrenewal or cancellation is filed. However, the application to cancel must be consistent with the criteria of the affected county or city. Nonrenewal or contract cancellation does not change a property's zoning. Participation in the Williamson Act program, which is voluntary for landowners, is dependent on a county's willingness to adopt and implement the program. The Williamson Act states that a board or council will, by resolution, adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the allowed uses. Generally, any

commercial agricultural use would be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted under a permit (DOC, 2022a).

California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Also Section 51238 states that board of supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses, in conformity with Section 51238.1. Furthermore, under California Government Code Section 51238.1, a board or council may allow any use that without conditions or mitigations would otherwise be considered incompatible. However, this may occur only if that use meets the following conditions:

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

A Williamson Act Contract cancellation is an option under limited circumstances and conditions set forth in Government Code Section 51280 et seq. In such cases, landowners may petition a board/council for Williamson Act Contract cancellation. The board/council may grant tentative cancellation only if it makes required statutory findings (Government Code Section 51282(a)). If the required findings are met, the landowner is required to pay a cancellation fee equal to 12.5% of the cancellation valuation (unrestricted fair market value) of the property (Government Code Section 51283(b)) (DOC, 2022b).

California Government Code Section 51282

California Government Code Section 51282 outlines the permitted reasoning for cancellation of Williamson Contracts below, under (a) and (b).

- (a) The landowner may petition the board or council for cancellation of any contract as to all or any part of the subject land. The board or council may grant tentative approval for cancellation of a contract only if it makes one of the following findings:
 - (1) That the cancellation is consistent with the purposes of this chapter.
 - (2) That cancellation is in the public interest.
- (b) For purposes of paragraph (1) of subdivision (a) cancellation of a contract shall be consistent with the purposes of this chapter only if the board or council makes all of the following findings:
 - (1) That the cancellation is for land on which a notice of nonrenewal has been served pursuant to Section 51245.
 - (2) That cancellation is not likely to result in the removal of adjacent lands from agricultural use.
 - (3) That cancellation is for an alternative use which is consistent with the applicable provisions of the city or county general plan.

- (4) That cancellation will not result in discontinuous patterns of urban development.
- (5) That there is no proximate noncontracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or, that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

As used in this subdivision "proximate, non-contracted land" means land not restricted by contract pursuant to this chapter, which is sufficiently close to land which is so restricted that it can serve as a practical alternative for the use which is proposed for the restricted land.

Farmland Security Zone Act

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

Public Resources Code Section 21060.1

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

Local

Kern County General Plan

The Kern County General Plan states that agriculture is vital to the future of Kern County and sets goals to protect important agricultural lands for future use and prevent the conversion of prime agricultural lands to other uses (e.g., industrial or residential). The Kern County General Plan includes four (4) designations for agricultural land:

- **8.1 Intensive Agriculture (minimum parcel size 20 acres gross)** – Lands devoted to the production of irrigated crops or having potential for such use.

Uses shall include, but are not limited to, the following: Irrigated cropland; orchards; vineyards; horse ranches; raising of nursery stock ornamental flowers and Christmas trees; fish farms' bee keeping' ranch and farm facilities and related uses; one single-family dwelling unit; cattle feed yards; dairies; dry land farming; livestock grazing; water storage; groundwater recharge acres; mineral; aggregate; and petroleum exploration and extraction; hunting clubs; wildlife preserves; farm labor housing; public utility uses; and agricultural industries pursuant to provisions of the Kern County Zoning Ordinance, and land within development areas subject to significant physical constraints.

- **8.2 Resource Reserve (minimum parcel size is 20 acres gross, except to a Williamson Act Contract/Farmland Security Zone Contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands devoted to areas of mixed natural resource characteristics including rangeland, woodland, and wildlife habitat which occur in an established County water district.
- **8.3 Extensive Agriculture (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands devoted to uses involving large amounts of land with relatively low value-per-acre yields such as livestock grazing, dry-land farming, and woodlands.
- **8.4 Mineral and Petroleum (minimum parcel size 5 acres gross)** – Areas which contain producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. Uses are limited to activities directly associated with the resource extraction. Minimum parcel size is five gross acres. Uses shall include, but are not limited to, the following:
 - Mineral and petroleum exploration and extraction, including aggregate extraction; extensive and intensive agriculture; mineral and petroleum processing (excluding petroleum refining); natural gas and geothermal resources; pipelines; power transmission facilities; communication facilities; equipment storage yards; and borrow pits.
- **8.5 Resource Management (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands consisting primarily of open space containing important resource values, such as wildlife habitat, scenic values, or watershed recharge areas. These areas may be characterized by physical constraints, or may constitute an important watershed recharge area or wildlife habitat or may have value as a buffer between resource areas and urban areas. Other lands with this resource attribute are undeveloped, non-urban areas that do not warrant additional planning within the foreseeable future because of current population (or anticipated increase), marginal physical development, or no subdivision activity.

Additionally, the designation of 8.5 (Resource Management) can be used for agricultural uses such as dry-land farming and ranch facilities.

The policies, goals, and implementation measures in the Kern County General Plan for agricultural resources applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference (Kern County, 2009).

Chapter 1. Land Use, Open Space, and Conservation Element

1.9 Resource

Goals

- Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.
- Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.

- Goal 3: Ensure the development of resource areas minimize effects on neighboring lands
- Goal 5: Conserve prime agriculture lands from premature conversion.
- Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policies

- Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of general plan designation.
- Policy 5: Areas of low intensity agriculture use (Map Code 8.2 (Resource Reserve), Map Code 8.3 (Extensive Agriculture), Map Code 8.5 (Resource Management)) should be of an economically viable size in order to participate in the State Williamson Act Program/Farmland Security Zone Contract.
- Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.
- Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.
- Policy 16: The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission.

Implementation Measure

- Measure B: Areas designated as Resource Reserve (Map Code 8.2), Extensive Agriculture (Map Code 8.3), Resource Management (Map Code 8.5) that are under Williamson Act Contracts or Farmland Security Zone Contracts will have a minimum parcel size of 80 acres until such time as a contract is expired or is cancelled, at which time the minimum parcel size will become 20 acres.

Kern County Zoning Ordinance

The Kern County Zoning Ordinance establishes basic regulations under which land is developed. This includes allowable uses, building setback requirements, and development standards. Pursuant to state law, the zoning ordinance must be consistent with the Kern County General Plan. The basic intent of the Kern County Zoning Ordinance is to promote and protect the public health, safety, and welfare via the orderly regulation of the land uses throughout the unincorporated area of the county. The zoning ordinance applies to all property in unincorporated Kern County, except land owned by the United States or any of its agencies.

As previously mentioned in Chapter 3, *Project Description*, and as described in 4.2.2, *Local Setting*, the Kern County Zoning Ordinance designates the project site Exclusive Agriculture (Zone A).

Williamson Act Standard Uniform Rules

Kern County has adopted a set of rules that identify compatible land uses within agricultural preserves established under the Williamson Act. The rules restrict uses on such land to agricultural or other compatible uses. Agricultural uses include crop cultivation, grazing commercial wind farms, livestock breeding, dairies, and uses that are incidental to these uses. Other compatible agricultural uses include those associated with public utilities (e.g., gas, electric, communications, water, and other similar public utilities). For purposes of this analysis, the conversion of agricultural land to a solar facility itself would be incompatible with the farming provisions necessary for projects under the existing Williamson Act Contract. The project is subject to these rules, as it is on contracted land, and would be required by Kern County to petition for an early cancellation of the contract.

4.2.4 Impacts and Mitigation Measures

Methodology

The project's potential impacts on agriculture and forest resources have been evaluated on a qualitative basis by reviewing the *Agricultural Conservation Study for Kern County Azalea Solar Energy Project* (2021) (Appendix B), the DOC California Important Farmland Map, and Kern County's Online GIS mapper. A change in land use would normally be determined to be significant if the effects described in the thresholds of significance were to occur (see CCR Title 14, Section 15064.7(a)). The evaluation of project impacts is based on a thorough analysis of the Kern County General Plan's applicable goals and policies related to agricultural resources, professional judgment, and the significance criteria established by CEQA.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify, per Appendix G of the CEQA Guidelines, that a project would have a significant impact on agriculture and forest resources if it would:

- a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;
- b. Conflict with existing zoning for agricultural use or Williamson Act Contract;
- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104 (g)).
- d. Result in the loss of forestland or conversion of forest land to non-forest use.
- e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use; or
- f. Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code.

Project Impacts

Impact 4.2-1: The project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.

None of the project site's soils is considered prime farmland. The CDOC FMMP list no prime soils on the project site. The CDOC FMMP does not designate any Prime Farmland, Unique Farmland or Farmland of Statewide Importance mapped on any of the project parcels. Therefore, implementing the project would not result in the conversion of any Prime Farmland and would not remove any Prime Farmland from production. Thus, impacts would be less than significant associated with the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance from project implementation.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco substation would be extended westerly from the project boundary to the Arco Substation and the access road would be extended from the northerly project boundary to King Road. These improvements would be made in areas are designated as grazing land and/or nonagricultural and natural vegetation. Use of these areas and would not result in the conversion of any designated farmland and impacts would not occur.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant for the project and the Arco substation connection and access road.

Impact 4.2-2: The project would conflict with existing zoning for agricultural use or Williamson Act Contract.

Implementation of the project would allow the siting of a solar energy facility, which is an authorized use with a CUP in the 'A' zone. An application for Nonrenewal Land Use Contract will be submitted to the County prior to construction for approximately 480 acres currently under a Williamson Act Land Use Contract. The Land Use Contract would not expire until August 2030. No other parcels within the project area are under contract.

As mentioned above, the project area is zoned Exclusive Agriculture (A). According to Kern County Zoning Ordinance 19.12.030, solar energy electrical facilities are permitted within the A (Exclusively Agricultural) Zone District with approval of a CUP. Therefore, the development of the project sites for use as a solar Energy would result in a less-than-significant impact related to conflicts with existing zoning with the approval of a CUP.

As indicated above, a Williamson Act Land Use Contract cancellation will be requested as part of the project and a Petition for cancellation of the contract was submitted to the County pursuant to Section 51282(a)(1), which requires that the cancellation is in the public interest. The County may grant cancellation

only if it makes the required statutory findings (Government Code §51282(a)). To determine that the cancellation is in the public interest, the County must find: (1) that other public concerns substantially outweigh the objectives of the Williamson Act, and (2) that there is no proximate non-contracted land that is both available and suitable for the proposed use or that development of the contracted land would provide more contiguous patterns of urban development (Government Code §51282(c)).

Table 4.2-3: Williamson Act Contract Cancellation Findings, provides the Williamson Act contract cancellation findings and provides a consistency analysis of whether or not the proposed project would meet the findings. As described below, the public benefit of the project to supply energy, provide energy security, and reduce the impacts of global climate change, and provide employment opportunities would substantially outweigh the objectives of the Williamson Act, and the finding set forth in Government Code Section 51282(c)(1) would be applicable. See **Table 4.2-3** below for the consistency determination of the project with Government Code Section 51282.1(c)(1).

TABLE 4.2-3: WILLIAMSON ACT CONTRACT CANCELLATION FINDINGS

Government Code Section 51282.1(c)(1). Cancellation of a contract shall be in the public interest only if the council or board makes the following findings:	
Required Finding	Determination
Other public concerns must substantially outweigh the objectives of this chapter.	<p>Consistent: Property under a Williamson Act contract must be used for qualifying agricultural uses. These properties originally filed for use as crop or orchard land which requires appropriate soils and irrigation. There is no dry farming in Kern County. The contract terms can no longer be satisfied due to water limitations in the Valley due to the mandatory restrictions of the Groundwater Sustainability Plans submitted to the Department of Water Resources by the valley</p> <p>Groundwater Authorities. The cancellation of the submitted Williamson Act Contract is therefore in the public interest of Kern County for integrity of the contract system. The alternative use of the property for the proposed solar energy facility is in the public interest for the State of California to achieve climate change goals and for Kern County as a productive use of the land. Over 500,000 acres of land will have to be fallowed over the next 10 years to balance the basins. Any water allocated to this property can be moved to other farmland to balance the basin and utilization of the land is at the discretion of the property owner. More specifically, cancellation of the Williamson Act contract for the purposes of constructing a solar farm is in the public interest for the following reasons:</p> <p>Rebalances Land Use for water availability Large scale solar projects are dependent on access to transmission and ability to consolidate parcels for appropriate size inside constraints of mineral resources, biological and cultural resources. These parcels have been determined to have water allocations better utilized by the farmer for other areas of the valley. Future water availability of farming is not certain and compliance with the requirements of the Williamson Act Contract that the land be farmed. The removal of</p>

Government Code Section 51282.1(c)(1). Cancellation of a contract shall be in the public interest only if the council or board makes the following findings:

	<p>the contract will provide for consistency in the implementation of the County's Williamson Act Contract program and ensure that uses are consistent with the Uniform Rules.</p> <p>Creates new source of renewable energy that reduces dependency on foreign energy sources The Project's primary objective is to support the generation of renewable energy in the State of California per the recent objectives outlined in SB 100. This legislation increased California's Renewable Portfolio Standard and established the State's intention to have zero- carbon and eligible renewable energy resources supply 100% of the State's retail electricity sales by the year 2045. This Project will supply solar photovoltaic energy that will help the State meet those ambitious goals. Increasing renewable energy sources in the County, such as the solar resources available increases the state and nation's sources of renewable energy and assists in meeting new environmental targets to reduce greenhouse gas emissions, including California's important Renewable Portfolio Standards of energy utilities.</p> <p>Promotes economic diversification and creates economic stimulus The County is dedicated to diversifying its economic base and has chosen the development of its natural renewable energy resources as one strategy to diversify while maintaining its rural character with reduced impacts to existing agricultural resources. Projects such as this one assists the County in its economic diversification strategy through the creation of new jobs—both direct and indirect—and opportunities for additional jobs, economic growth, and wealth creation. The solar project proposed on this land would create many new construction jobs in a county which suffers from an 11.6% employment rate. Long-term permanent jobs associated with the project's operation are expected to exceed the employment level associated with current operations on the project site. Employees anticipated for this project include a plant manager, maintenance technicians, equipment operators, and security personnel. These jobs would include benefits and would be year-round, higher paying jobs (typically \$15 to \$35 per hour) than the seasonal farm labor displaced.</p>
There must be no proximate noncontracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.	<p>Consistent: There are no proximate contracted lands available and suitable for siting a solar power facility. The unique siting requirements for a solar plant limit the number of parcels available and suitable for such use. The siting of solar facilities is largely determined by the needs to locate (1) at or very near existing substation/electrical transmission lines; (2) available transmission capacity in the substation/lines to carry</p>

Government Code Section 51282.1(c)(1). Cancellation of a contract shall be in the public interest only if the council or board makes the following findings:

	<p>the additional electricity produced which is a function not only of line capacity but also the arrangement of the electrical grid balanced loads.</p> <p>Furthermore, the applicants believe the County would be able to determine that in addition to cancelling the agricultural contract because of regular project boundaries, the County would also find that there is no proximate non-contracted land that is both available and suitable for the project.</p> <p>In searching for suitable parcels upon which to site this Project, research was conducted within a roughly two-mile radius of the Arco substation. This initial search strongly prioritized finding land that was not under Williamson Act contract due to both the stated purpose of the program as well as the significant financial penalties associated with cancelling existing contracts. However, the overwhelming majority of the land in this area is under Williamson Act contract. As an additional constraint, many of the lots are not large enough to accommodate a 60 MW utility scale solar PV facility, BESS, and related substation equipment. Assembling a development site large enough to accommodate the proposed development would require negotiations with multiple landowners. Some of the landowners in this area have made major long-term investments in permanent crops that make their properties unsuitable for solar. The proximity to existing or proposed transmission and the Arco substation is also a factor in eliminating non-contracted parcels.</p> <p>Finally, given the financial returns historically generated by permanent crops, even many landowners that have not yet planted permanent crops would have required land payments incompatible with a competitive solar project to compensate for foregoing the future opportunity to plant permanent crops. The proposed Project footprint, which entirely avoids impacts to permanent crops and has 42% of impacted acres outside Williamson Act contracts, therefore represents efforts to minimize impacts to agricultural operations in the area.</p>
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As shown above as **Table 4.2-3**, the proposed Williamson Act contract cancellations would be consistent with all required findings for cancellation in a public interest. It should be noted that the decision-makers retain the ability to propose alternate findings or modify the findings as they see fit. The cancellation petition would be submitted to the DOC for review and concurrence regarding whether both aforementioned findings could be made by the Kern County Board of Supervisors. The Kern County Board of Supervisors would consider the project proponent's petition for cancellation of the Williamson Act Contract concurrent with the consideration of the necessary land use approvals, and review all information and data provided to determine if the two findings can be made and the cancellation can be granted. Therefore, once all the

findings have been satisfied, Kern County has the ability to approve the Petition for Cancellation of Contract. As such, the applicant would be obligated to pay the cancellation fees pay the Williamson Act contract cancellation fee as determined by the Kern County Assessor's Office, which would be required as a Condition of Approval of the proposed Conditional Use Permits by the lead agency. With the payment of the cancellation fee, the contract cancellation process would be completed. However, payment of fees does not fully mitigate for conversion of farmland that would be a result of the cancellations of the contracts. Therefore, Williamson Act contract cancellations would constitute a significant impact.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco substation would be extended westerly to the Arco substation and the access road from the northern project boundary to King Road. This area is designated as existing grazing land and/or nonagricultural and natural vegetation. The gen-tie route would traverse approximately 0.5 miles of APN# 043-210-28 that is under a Williamson Act contract. However, the installation of power poles and the gen-tie line would constitute a minimal and temporary disturbance and would not preclude continue management of the property under the contract. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Thus, this element of the project would not conflict with a Williamson Act Contract. Impacts are less than significant in this regard.

Mitigation Measures

There are no feasible mitigation measures available that would reduce the impact to a less than significant level.

Level of Significance after Mitigation

Impacts would be significant and unavoidable for the project. Impacts would be less than significant for the interconnection with the Arco substation and access road.

Impact 4.2-3: The project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

The project is currently zoned for agricultural use. There is no forest land zoning on the project site and there are no forest uses on the project site. The project would not conflict with zoning for, or cause rezoning of, forest land, timberland, or timberland zoned timberland production. Additionally, it would not result in the loss of forest land or conversion of forest land to non-forest land. Lastly, the project would not involve any other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use. Therefore, no impacts would occur.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation, Arco Substation improvements, and access road would be extended through areas designated as grazing land and/or nonagricultural and natural vegetation. None of these areas contain any forest or timberland. No not conflicts would occur.

Mitigation Measures

No mitigation would be required.

Level of Significance

Less than significant impact for the project and the Arco substation and access road.

Impact 4.2-4: The project would result in the loss of forestland or conversion of forest land to non-forest use.

There is no forest land zoning on the project site and there are no forest uses on the project site. See discussion Impact 4.2-3, above.

PG&E Arco Substation Modification and Electric Transmission Interconnection

There is no forest land within either of these areas. See discussion Impact 4.2-3, above. No impacts would occur.

Mitigation Measures

No mitigation would be required.

Level of Significance

Less than significant impact for the project and the Arco substation and access road.

Impact 4.2-5: The project would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.

Regarding conversion of surrounding agricultural lands, based on the assessment provided in the *Agricultural Conversion Study* provided as Appendix B to this EIR, the project would not induce the conversion of other nearby agricultural lands to non-agricultural uses. The project would not convert lands designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use. None of the project sites parcels are consistently farmed. Developing the solar energy facility would preclude the sites from being available for agricultural production. However, the use of the sites for the generation of electricity through the passive conversion of sunlight is not anticipated to affect adjacent or nearby agricultural production negatively. There are lands adjacent to the project sites that are zoned for agricultural use, which are either used for agriculture or are undeveloped. Converting the project sites' unused agricultural land to a solar resource use is not anticipated to affect any nearby growers.

In addition, the project would not place additional restrictions on noise, burning, or dust generation on surrounding operations. Kern County Ordinance Code 8.56 (Ordinance G-6664, §2 [2000], Right-to-Farm and Right-to-Business) encourages the operation of properly conducted businesses involved in agriculture, oil, mining, manufacturing, and other non-residential operations within the County. In order to make potential solar developers and operators aware of possible impacts from nearby agricultural, oil, mining, manufacturing, and other non-residential activities, the County requires a note on all project site plans that would inform the developer or operator that the property may be subject to inconveniences or discomforts arising from surrounding agricultural and/or oil exploration and extraction operations.

The following note shall appear on all site plans: *"The County of Kern encourages operation of properly conducted businesses in agriculture, oil, mining, manufacturing, and other non-residential operations within the County. If the property you are purchasing is located near these businesses, you may be subject to inconveniences or discomforts arising from such operations to the extent allowed by law. This notice does not waive your legal rights."*

There is one access road under consideration (See **Figure 3-4**) which would be used for construction activity. This temporary (12-14 months) construction activity would involve hauling heavy equipment and workers to and from the solar site. The contracted land (APN 043-210-28) is located north of the existing substation. Since use of the land for grazing livestock can be scheduled to accommodate the equipment and personnel hauling and the construction is temporary, this is not considered to be a significant impact.

Also, development would not result in any significant environmental impacts on adjacent properties. Impacts from construction and operation activities that may result from the release of fuels, solvents, pesticides, or herbicides onto adjacent properties would be reduced to less-than-significant levels through the implementation of a MM 4.9-1, which requires the project prepare and maintain a Hazardous materials Business Plan (HMBP) and MM 4.9-2, which requires the project proponent conduct soil sampling and perform remediation if necessary. As a result, the project would not include activities restricting or impairing agricultural production on adjacent land or nearby properties. With implementation of project best management practices, and complying with all Federal, State, and local laws and regulations environmental impacts would be considered less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These areas are designated as grazing land and/or nonagricultural and natural vegetation. Use of these area for this element of the project would not conflict with existing agricultural uses or any area use for timber production. Impacts would be less than significant in this regard.

Mitigation Measures

Implement Mitigation Measures MM 4.9-1 and MM 4.9-2 (See Section 4.9 *Hazards and Hazardous Materials*).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 and MM 4.9-2, impacts would be less than significant. Impacts would be less than significant without mitigation for the connection with Arco Substation and access road.

Impact 4.2-6: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 acres or more (Public Resources Code Section 15206(b)(3)).

Kern County's adopted threshold analyzes whether the project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code). Implementation of the project would result in the construction of an approximately 640-acre photovoltaic solar facility. Approximately 480 acres is subject to a Williamson Act Contract. The applicant will file a Notice of Non-Renewal and a Petition of Cancellation for the parcel prior to start of construction, which would subsequently remove those properties from the Williamson Act. The project site is not subject to a Farmland Security Zone Contract pursuant to Public Resources Code Section 15206(b)(3). As stated above, the project would result in the cancellation of a Williamson Act Contract, in non-renewal status. As discussed in more detail under 4.2.3, Regulatory Setting, above, the principal purpose of the Williamson Act is to preserve agricultural and open space lands from conversion to nonagricultural or incompatible uses. A commercial solar facility is not listed as a compatible use in the Williamson Act Standard Uniform Rules, as adopted by the Kern County Board of Supervisors; therefore, the project would not be consistent with the existing contract. The existing Williamson Act Contract on the project site parcels are set to expire. The project proponent will petition for cancellation of the Williamson Act Contract, pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest. Cancellation of a Williamson Act Contract is an option under the limited circumstances and conditions as set forth in Government Code Section 51280 et seq. In such cases, landowners may petition the Kern County Board of Supervisors for cancellation of a Williamson Act Contract. The Kern County Board of Supervisors may grant a tentative cancellation only if it makes the required statutory findings (Government Code Section 51282(a)).

The cancellation of the project's contracts is a potentially significant amount of land in terms of its agricultural value. The parcel exceeds the adopted 100 acre per parcel threshold of significance, which would be a significant impact. Notwithstanding the benefits of the project stated above, the cancellation of approximately 480 acres of contracted land constitutes a potentially significant impact.

As the project site is currently subject to a Williamson Act Contract, development of the project prior to expiration would conflict with the contract, which, as noted above, was made to restrict the project site to agricultural and compatible uses. Therefore, the project would require the cancellation of an open space contract made pursuant to the California Lands Conservation Act of 1965 for a parcel over 100 acres. As stated in Section 3.3: *Project Objectives*, the project is being developed to assist the State of California in meeting its renewable energy goals, to develop a commercially viable solar power generation and battery storage facility, and assist Kern County in achieving the goal in the Energy Element of its General Plan to develop large-scale solar energy development as a major energy source in the County. To achieve these objectives, a solar facility of larger than 100 acres is required. Reducing the project size to less than 100 acres would not make the project feasible. Please see Section 6.7.3: *Reduced Acreage Alternative*.

Mitigation Measure MM 4.2-1 is provided to ensure the loss of Williamson Act lands are accounted for; however, impacts would not be reduced to a level that is less than significant because the project would still result in a cancellation of an open space contract for the protection of agricultural lands. Impacts would remain significant and unavoidable.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These areas are characterized by existing grazing land and/or nonagricultural and natural vegetation. The gen-tie line would extend approximately 0.5 miles through property under a Williamson Act Contract. This element of the project, however, would not preclude continued operation of the property under the contract. Impacts in this regard would be less than significant.

Mitigation Measures

MM 4.2-1 Prior to issuance of any grading or building permit or any use of the property for storage of materials or panels, cancellation of all Williamson Act contracts shall be completed for the project development area or the period for nonrenewal shall have been completed and the identified parcels determined to no longer be under contract.

Level of Significance

Impacts would be significant and unavoidable for the project. Impacts would be less than significant without mitigation for the connection with Arco substation and access road.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative impacts is Kern County as a whole. As discussed previously, Kern County ranks high on the list of California counties with respect to urbanization and loss of farmland. Although, growth in population is likely to decrease the amount of agricultural land in Kern County in the future, other factors, including availability of water also contribute to decreases in farmland.

Current conditions related to drought, water availability, and the economic impacts of water purchases may have resulted in some of the project sites being excluded from agriculture during previous years. The project is a compatible, low intensity use that does not limit agricultural activities such as pesticide spraying and crop dusting or create impacts such as dust or debris that would otherwise force agricultural activities from the area.

Besides the beneficial aspects of the project relative to renewable resource-based energy production, job creation and increased sale and property taxes, implementation of the project would have favorable impacts on regional agriculture by reducing on-site water consumption thereby making more water available for other farmers. Cumulative projects, which are subject to Williamson Act Contracts in non-renewal status, would not be developed until the existing Williamson Act Contracts expire and similarly would not result in any conflicts related to cancellation of an open space contract or a Farmland Security Zone contract. The project's incremental effect is not cumulatively considerable when viewed in connection with the effects

of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts would be less than significant. Notwithstanding the beneficial factors of the proposed project, which reduce project impacts, the cancellation of approximately 640 acres of contracted lands, combined with other projects projected in the Kern County General Plan over the 30-year life of the project would result in a cumulatively significant impact.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco substation would be extended westerly to the Arco Substation and the access road would be extended from the northerly property boundary to King Road. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Both these areas are characterized by existing grazing land and/or nonagricultural and natural vegetation. The gen-tie line would extend across a portion of a parcel under a Williamson Act Contract, but it would not preclude its continuation under the contract. None of these areas are designated by the CDOC as important farmland and none of the areas contain forest or timberland resources. Use of these area for these elements of the project would not conflict with existing agricultural uses or any area use for timber production or result in cumulative effects in this regard.

Mitigation Measures

Implement Mitigation Measure MM 4.2-1.

Level of Significance

Impacts would be significant and unavoidable for the project. Impacts would less than significant without mitigation for the connection with the Arco substation and access road.

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Section 4.3 Air Quality

4.3.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project and evaluates the short- and long-term air quality impacts associated with development of the site. Further, this analysis describes the affected environment and regulatory setting for air quality. Where necessary, mitigation measures are included to avoid or lessen the impacts of the project.

Information in this section is based primarily on the *Air Quality and Greenhouse Gas Emissions Study* located in Appendix C of this EIR. The report was prepared in accordance with the Kern County Planning Department's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports (Kern County, 2006) and San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD, 2015a).

4.3.2 Environmental Setting

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic drainage features. The project site is located in the Kern County portion of the San Joaquin Valley Air Basin (SJVAB) under the jurisdiction of the SJVAPCD. The SJVAPCD includes the western half of Kern County. It is separated from the Mojave Desert Air Basin to the southeast by the Tehachapi Mountains and the south end of the Sierra Nevada Mountains.

Topography and Meteorology

Air pollution, especially the dispersion of air pollutants, is directly related to a region's topographic features. Air quality is a function of both the rate and location of pollutant emissions and the meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects ambient air quality.

The project is located in the northwest portion of unincorporated Kern County. The nearest populated area to the project site in Kern County is the unincorporated community of Lost Hills located approximately 14 miles southeast of the project site. Kettleman City is located approximately 16 miles north of the project site in Kings County. Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access roadways, a canal and a nut processing plant.

Kern County is predominately affected by the San Joaquin Valley, which is considered to be a Mediterranean climate area. Mediterranean climate zones are characterized by sparse rainfall, which occurs mainly in winter, and hot dry summers (SJVAPCD, 2015a). The San Joaquin Valley Air Basin in particular is characterized by hot, dry summers and cool, rainy winters. The climate is a result of the topography and the strength and location of a semi-permanent, subtropical high-pressure cell.

Winds in south-eastern Kern County typically blow from the northwest. The region's topographic features restrict air movement and channel the air mass towards the southeastern end of the San Joaquin Valley, away from where the project is located (SJVAPCD, 2015a). This effect moderates air temperatures in the region, with average minimum winter temperatures ranging from the low 40s degrees Fahrenheit (°F) to the mid-40s°F and average maximum summer temperatures ranging from the low 90s°F to 100°F (Western Regional Climate Center [WRCC], 2021). Wind speeds are moderate in this region, with annual average wind speeds of approximately 5 miles per hour (WeatherSpark, 2021).

The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the San Joaquin Valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500 to 3,000 feet). Winter-time high-pressure events can often last many weeks with surface temperatures often lowering into the 30s°F. During these events, fog can be present, and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet (SJVAPCD, 2015a).

Sensitive Receptors

Sensitive receptors are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Residences, schools, hospitals, convalescent homes, and parks are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The project is located in unincorporated northwestern Kern County. One residential sensitive receptor is located 0.67 miles east of the project site. There are no non-residential sensitive receptors within 14 miles of the project; the closest non-residential sensitive receptor is more than 17 miles southeast of the project, in the community of Lost Hills.

Ambient Air Quality Standards

National and State Standards

Regulation of air pollution is achieved through both federal and State ambient air quality standards and permitted emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the United States Environmental Protection Agency (EPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM) (specifically PM₁₀ and PM_{2.5}), and lead (Pb). These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, EPA has set “primary” and “secondary” ambient standards for each of the criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

Regional and Local Standards

NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]).

Table 4.3-1: *National and State Criteria Pollutant Standards and SJVAPCD Attainment Status*, presents both sets of ambient air quality standards (i.e., national and State) as well as attainment status for each of these standards within the SJVAPCD jurisdiction. If a pollutant concentration in an area is lower than the established standard, the area is classified as being in “attainment” for that pollutant. If the pollutant concentration meets or exceeds the standard (depending on the specific standard for the individual pollutants), the area is classified as a “nonattainment” area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified.”

As shown in **Table 4.3-1**, the State attainment status for SJVAPCD is currently nonattainment/severe for 1-hour ozone standards, nonattainment for 8-hour ozone standards, nonattainment for 24-hour and annual arithmetic mean (AAM) for PM10 standards, and nonattainment for AAM for PM2.5. The national attainment status for the project area is currently nonattainment/extreme for 8-hour ozone standards and nonattainment for 24-hour and AAM for PM2.5 standards. State and national standards of all of the other criteria pollutants are classified as attainment and/or unclassified (SJVAPCD 2022; SJVAPCD 2018b).

TABLE 4.3-1: NATIONAL AND STATE CRITERIA POLLUTANT STANDARDS AND SJVAPCD ATTAINMENT STATUS

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm	Non-Attainment/Severe	—	— ^b
	8-hour	0.070 ppm	Nonattainment	0.070 ppm ^a	Nonattainment/Extreme
Particulate Matter (PM ₁₀)	AAM ^c	20 µg/m ³	Non-Attainment	—	Unclassified
	24-hour	50 µg/m ³		150 µg/m ³	Attainment
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	Nonattainment	12.0 µg/m ³	Nonattainment
	24-hour	No Standard		35 µg/m ³	Nonattainment
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment	35 ppm	Attainment
	8-hour	9.0 ppm		9 ppm	
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	Attainment	0.053 ppm	Attainment
	1-hour	0.18 ppm		100 ppb ^d	
Sulfur Dioxide (SO ₂)	24-hour	0.04 ppm	Attainment	-	-
	3-hour	—	-	0.5 ppm	Attainment
	1-hour	0.25 ppm	Attainment	0.075 ppb	Unclassified
Lead	30-day Average	1.5 µg/m ³	Attainment	—	-
	Rolling 3-Month Average	—	-	0.15 µg/m ³	Attainment
Sulfates	24-hour	25 µg/m ³	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (42 µg/m ³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

Note: ppm = parts per million by volume, $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

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

^b No federal 1-hour standard (revoked as of June 15, 2004).

^c AAM = annual arithmetic mean

^d To attain this standard, the 3-year average of the 98th percentile daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).

SOURCE: SJVAPCD, 2022; SJVAPCD, 2018a

Local Air Quality

To assess localized CO impacts, the significance thresholds are based on the state CO standards, shown in **Table 4.3-1: National and State Criteria Pollutant Standards and SJVAPCD Attainment Status**, which are 20 parts per million (ppm) for 1-hour CO concentration levels and 9 ppm for 8-hour CO concentration levels. If CO concentration levels with the project would be less than the standards, then there would be no significant impact on local air quality. If future CO concentrations with the project would be above the standards, then the increase due to the project would determine if the impact would be significant or less than significant. A project would have a significant impact on local air quality if the project would result in an increase of 1 ppm or more for the 1-hour averaging time or 0.45 ppm or more for the 8-hour averaging time.

Ambient Air Monitoring

CARB has established and maintains a network of sampling stations (called the State and Local Air Monitoring Stations [SLAMS] network) that work in conjunction with local air pollution control districts (APCDs) and air quality management districts to monitor ambient pollutant levels. The SLAMS network in Kern County consists of eight stations that monitor various pollutant concentrations. The locations of these stations were chosen to meet monitoring objectives, which, for the SLAMS network, call for stations that monitor the highest pollutant concentrations, representative concentrations in areas of high population density, the impact of major pollution emissions sources, and general background concentration levels.

The primary pollutants of concern in the project area are ozone, PM_{10} , and $\text{PM}_{2.5}$ because the San Joaquin Valley is designated nonattainment for these pollutants by the EPA and/or CARB. Ten ambient air monitoring stations operate in Kern County. Air quality data statistics from the Golden State Highway ambient air monitoring station were used as representative of the project area's environmental setting for PM_{10} and $\text{PM}_{2.5}$. Air quality data statistics from the Shafter ambient air monitoring station were used for Ozone. The two stations are the closest to the project site, located approximately 66 miles and 46 miles southeast from the project site respectively. Ambient monitoring data obtained for 2017 through 2019 is summarized below in **Table 4.3-2: Air Quality Data Summary (2017–2019)**.

TABLE 4.3-2: AIR QUALITY DATA SUMMARY (2017–2020)

Pollutant	Monitoring Year			
	2017	2018	2019	2020
Ozone (O₃)^a				
Maximum concentration (1-hour average)	0.094	0.098	0.087	0.116
Number of days State/national 1-hour standard exceeded	0-4	0-4	0-4	0-4
Maximum concentration (8-hour average)	0.082	0.090	0.077	0.098
Number of days State 8-hour standard exceeded	15-35	15-35	15-35	15-35
Suspended Particulate Matter (PM_{2.5})^a				
Maximum concentration (24-hour)	74.3	99.1	66.1	150.2
Number of days national standard exceeded	12-34	12-34	12-34	12-34
Suspended Particulate Matter (PM₁₀)^a				
Maximum concentration (24-hour)	158.2	155.3	652.2	146.8
Number of days standard exceeded (state/national)	130-163	130-163	130-163	*- 157
SOURCE: S2S Environmental Resource Management, 2021				
* Insufficient data to determine value.				

Criteria Air Pollutants

The following is a general description of the physical and health effects from the governmentally regulated air pollutants shown in **Table 4.3-1: National and State Criteria Pollutant Standards and SJVAPCD Attainment Status**.

Ozone (O₃)

Ozone (O₃) occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. At ground level, tropospheric, or “bad,” ozone is an air pollutant that damages human health, vegetation, and many common materials. Ozone is a key ingredient of urban smog. The troposphere extends to a level approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric, or “good,” ozone layer extends upward from approximately 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

“Bad” ozone is what is known as a photochemical pollutant, which needs reactive organic gases (ROG), oxides of nitrogen (NO_x), and sunlight to form. ROG and NO_x are emitted from various sources throughout Kern County. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Ozone is a regional air pollutant, which is generated over a large area and transported and spread by the wind. As the primary constituent of smog, ozone is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, it is not emitted directly into the air by specific sources but is created by sunlight acting on other air pollutants (the precursors), specifically NO_x and ROG. Sources of

precursor gases number in the thousands and include common sources such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Health Effects

While ozone in the upper atmosphere protects the earth from UV-B, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to high ozone levels.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation, lung tissue damage, and a reduction in the amount of air inhaled into the lungs. Health effects include potential increased susceptibility to respiratory infections and reduced ability to exercise. Health effects are more severe in people with asthma and other respiratory ailments. People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. Also, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures. Elevated ozone concentrations also reduce crop and timber yields, damage native plants, and damage materials such as rubber, paints, fabric, and plastics (CARB and American Lung Association of California, 2007).

Reactive Organic Gases (ROGs) and Volatile Organic Compounds (VOCs)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including reactive organic gases (ROGs) and volatile organic compounds (VOCs), which include all hydrocarbons except those exempted by CARB. Therefore, ROGs are a set of organic gases based on State rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by Federal law. Both VOCs and ROGs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

Health Effects

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects (see ozone health effects discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate federal or California ambient air quality standards for ROG. Carcinogenic forms of ROG are

considered toxic air contaminants (TACs). An example is benzene, which is a carcinogen. The health effects of individual ROGs are described in the “Toxic Air Contaminants” section below.

Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, which contributes more than 66 percent of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Health Effects

When inhaled, CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, than oxygen, thereby reducing the oxygen-carrying capacity of blood and reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, with prolonged enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin in the blood. Exposure to elevated concentrations of CO weakens the heart's contractions and lowers the amount of oxygen carried by the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome; and increased daily mortality rate (Fierro et al., 2001).

Oxides of Nitrogen (NO_x)

Oxides of nitrogen (NO_x) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and reacts in the atmosphere to form acid rain. NO_x is emitted from solvents and combustion processes in which fuel is burned at high temperatures, principally motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. In terms of NO_x emissions, the two principal species of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂), with the vast majority (95 percent) of the NO_x emissions being comprised of NO. NO is converted to NO₂ by several processes, the two most important of these are: (1) the reaction of NO with ozone; and (2) the photochemical reaction of NO with hydrocarbons. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates.

Health Effects

NO_x is an ozone precursor that combines with ROG to form ozone. See the ozone section above for a discussion of the health effects of ozone. Direct inhalation of NO_x can cause a wide range of health effects. Health effects of NO_x include irritation of the lungs, lung damage, and lowered resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of NO₂ may lead to changes in airway responsiveness and lung function in individuals with pre-existing respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO₂ may lead to increased susceptibility to respiratory infection and may cause irreversible lung damage. Other health effects associated with NO₂ are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. Clinical studies of human subjects suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children. Epidemiological studies have also shown associations between NO₂ concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and indirectly when combined with other precursors in acid rain and ozone. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to the production of particulate nitrates. Airborne NO_x can also impair visibility. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life). Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms. NO_x also contributes to visibility impairment (CAPCOA, 2019).

Sulfur Dioxide (SO₂)

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO₂) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

SO₂ is a colorless, irritating gas with a “rotten egg” smell that is formed primarily by the combustion of sulfur-containing fossil fuels. Historically, SO₂ was a pollutant of concern in Kern County, but with the successful implementation of regulations, the levels have been reduced significantly.

Health Effects

High concentrations of SO₂ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Health effects from exposure to emissions of SO₂ include aggravation of lung diseases, especially bronchitis, and constricting of breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Short-term exposures of individuals to elevated SO₂ levels during

moderate activity may result in health effects including breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other health effects that have been associated with longer-term exposures to high concentrations of SO₂, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO₂ also is a major precursor to particulate matter that is 2.5 microns or less (PM_{2.5}), which is a significant health concern and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

SO₂ not only has a bad odor, but can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. SO₂ can also irritate the lung and throat at concentrations greater than 6 ppm in many people; impair the respiratory system's defenses against foreign particles and bacteria when exposed to concentrations less than 6 ppm for longer time periods; and enhance the harmful effects of ozone (combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing).

SO₂ tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. Effects are more pronounced among "mouth breathers," e.g., people who are exercising or who have head colds. These effects include:

- Health problems, such as episodes of bronchitis requiring hospitalization associated with lower-level acid concentrations;
- Self-reported respiratory conditions, such as chronic cough and difficult breathing, associated with acid aerosol concentrations (individuals with asthma are especially susceptible to these effects. The elderly and those with chronic respiratory conditions may also be affected at lower concentrations than the general population);
- Increased respiratory tract infections associated with longer term, lower level exposures to SO₂ and acid aerosols; and
- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities due to long-term exposure.

SO₂ easily injures many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. The effects include:

- Visible injury to the most sensitive plants at exposures as low as 0.12 ppm for eight hours;
- Visible injury to many other plant types of intermediate sensitivity at exposures of 0.30 ppm for eight hours; and
- Positive benefits from low levels in a very few species growing on sulfur-deficient soils.

Increases in SO₂ concentrations accelerate the corrosion of metals, probably through the formation of acids. SO₂ is a major precursor to acidic deposition. Sulfur oxides may also damage stone and masonry, paint, various fibers, paper, leather, and electrical components.

Increased SO₂ also contributes to impaired visibility. Particulate sulfate, much of which is derived from SO₂ emissions, is a major component of the complex total suspended particulate mixture.

Particulate Matter (PM₁₀ and PM_{2.5})

Particulate matter (PM) pollution consists of very small liquid and solid particles floating in the air. Some particles are large and dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. PM is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. PM also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM or airborne dusts are the small particles that remain suspended in the air for long periods of time. Particulates of concern are those that are 10 microns or less in diameter (PM₁₀) and 2.5 microns or less in diameter (PM_{2.5}). Thus, PM_{2.5} is a subset of PM₁₀. PM₁₀ and PM_{2.5} are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

The composition of PM₁₀ and PM_{2.5} can vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM₁₀ and PM_{2.5}. In addition to those listed previously, secondary particles can also be formed as precipitates from photochemical reactions of gaseous SO₂ and NO_x in the atmosphere to create sulfates (SO₄) and nitrates (NO₃), respectively. Secondary particles are of greatest concern during the winter months when low inversion layers tend to trap the precursors of secondary particulates.

In the western U.S., there are sources of PM₁₀ in both urban and rural areas. PM₁₀ and PM_{2.5} are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely.

Health Effects

PM₁₀ and PM_{2.5} particles are small enough—about one seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses and can be trapped in the nose, throat, and upper respiratory tract. Health effects from exposure to PM₁₀ and PM_{2.5} begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. PM₁₀ and PM_{2.5} can aggravate respiratory disease and cause lung damage, cancer, and premature death. Sensitive populations, including children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis, are especially vulnerable to the effect of PM₁₀. Of greatest concern are recent studies that link PM₁₀ exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM₁₀ can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States. Non-health related effects include reduced visibility and soiling of buildings.

Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and secondhand smoke. One of the most dangerous pollutants, fine particulate matter (e.g., from diesel exhaust) not only bypasses the body's defense mechanisms and becomes embedded in the deepest recesses of the lung but also can disrupt cellular processes. Population-based studies in hundreds of cities in the United States and around the world have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Long-term studies of

children's health conducted in California have demonstrated that particulate pollution may significantly reduce lung function growth in children (CARB and American Lung Association of California, 2007).

A 2006 study provides evidence that exposure to particulate air pollution is associated with lung cancer. This study found that residents who live in an area that is severely affected by particulate air pollution are at risk of developing lung cancer at a rate comparable to nonsmokers exposed to secondhand smoke. This study also found approximately 16 percent excess risk of dying from lung cancer due to fine particulate air pollution (Pope & Dockery, 2006).

Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of fine air pollution. Fine particles can penetrate the lungs and cause the heart to beat irregularly, or can cause inflammation, which could lead to a heart attack (Peters et al., 2001).

Attaining the California particulate matter standards would annually prevent about 6,500 premature deaths, or 3 percent of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand smoke in 2000. In comparison, motor vehicle crashes caused 3,200 deaths, and 2,000 deaths resulted from homicide. Attaining the California particulate matter and ozone standards would annually prevent 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for cardiovascular disease, and 2,000 asthma-related emergency room visits. Exposure to diesel particulate matter (DPM) causes about 250 excess cancer cases per year in California (Kern County, 2006).

Sulfates

Sulfates (SO_4^{2-}) are particulate product that comes from the combustion of sulfur-containing fossil fuels. When sulfur monoxide or SO_2 is exposed to oxygen, it precipitates out into sulfates (SO_3 or SO_4). Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

Health Effects

CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in oxygen intake, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. When acidic pollutants and particulates are also present, SO_2 tends to have an even more toxic effect. In addition to particulates, SO_3 and SO_4 are also precursors to acid rain. SO_x and NO_x are the leading precursors to acid rain. Acid rain can lead to corrosion of man-made structures and cause acidification of water bodies. Sulfates are particularly effective in degrading visibility and, because they are usually acidic, can harm ecosystems and damage materials and property (CARB, 2022).

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Historically, lead was used to increase the

octane rating in automobile fuel. However, because gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels and that use has been mostly phased out, the ambient concentrations of lead have dropped dramatically.

Health Effects

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ. Recent studies also show that lead may be a factor in high blood pressure and subsequent heart disease. Lead can also be deposited on the leaves of plants, presenting a hazard to grazing animals and humans through ingestion (EPA, 2002).

This highly toxic metal has been used for many years in everyday products, and has been found to cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children six years old and under are most at risk, because their bodies are growing quickly.

If not detected early, children with high levels of lead in their bodies can suffer from:

- Damage to the brain and nervous system;
- Behavior and learning problems (such as hyperactivity);
- Slowed growth;
- Hearing problems; and
- Headaches.

Lead is also harmful to adults. Adults can suffer from:

- Difficulties during pregnancy;
- Other reproductive problems (in both men and women);
- High blood pressure;
- Digestive problems;
- Nerve disorders;
- Memory and concentration problems; and
- Muscle and joint pain.

Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products.

Other Pollutants

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. H_2S in the atmosphere would likely oxidize into SO_2 that can lead to acid rain. At low concentrations H_2S , which has a characteristic “rotten egg” smell, may cause irritation to the eyes, mucous membranes and respiratory system, dizziness and headaches. In high concentrations (800 ppm can cause death) hydrogen sulfide is extremely hazardous, especially in enclosed spaces. Occupational Safety and Health Administrations (OSHA) has the primary responsibility for regulating workplace exposure to H_2S .

Health Effects

Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of H_2S (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of H_2S (0.00011–0.00033 ppm). Deaths due to breathing in large amounts of H_2S have been reported in a variety of different work settings, including sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools.

Vinyl Chloride

Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as PVC pipes, pipe fittings, and plastics.

Health Effects

In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of liver angiosarcoma, which is a rare cancer, and have suggested a relationship between exposure cancers of the lung and brain. There are currently no adopted ambient air standards for vinyl chloride.

Short-term exposure to vinyl chloride has been linked with the following acute health effects (EPA, 2020):

- Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.
- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness; irritation to the lungs and kidneys; inhibition of blood clotting in humans; and cardiac arrhythmias in animals.
- Tests involving acute exposure of mice to vinyl chloride have shown high acute toxicity from inhalation exposure to the substance.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (EPA, 2020):

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.
- A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed “vinyl chloride disease,” which is characterized by Raynaud’s phenomenon (fingers blanch and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).
- Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Several reproductive/developmental health effects from vinyl chloride exposure have been identified (EPA, 2020):

- Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible co-occurring exposure to other chemicals.
- Several epidemiological studies have reported an association between vinyl chloride exposure in pregnant women and an increased incidence of birth defects, while other studies have not reported similar findings.
- Epidemiological studies have suggested an association between men occupationally exposed to vinyl chloride and miscarriages during their wives’ pregnancies, although other studies have not supported these findings.
- Long-term exposure to vinyl chloride has also been identified as a cancer risk. Inhaled vinyl chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the liver) in humans. Animal studies have shown that vinyl chloride, via inhalation, increases the incidence of angiosarcoma of the liver and cancer of the liver.

Visibility Reducing Particles

Visibility-reducing particles is a measure of visibility. CARB does not yet have a measurement method that is accurate or precise enough to designate areas in the State as being in attainment or nonattainment. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Except for Lake County (which is designated to be in attainment), California’s attainment status with respect to visibility-reducing particles is currently designated as unclassified.

Toxic Air Contaminants (TAC)

Toxic air contaminants (TACs), as known under the California Clean Air Act of 1988 (CCAA), are 10 pollutants have been identified through ambient air quality data as posing the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to

brain and nervous system and respiratory disorders. CARB provides TAC emission inventories for only the larger air basins.

Sources include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners and motor vehicle exhaust. TACs do not have ambient air quality standards. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic “Hot Spots” Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the Act must prepare and submit toxic emission inventory plans and reports to CARB and periodically update those reports. While TACs do result in potential health risks for those exposed, the project would not emit TACs with the exception of diesel particulate matter, which, therefore, is the only TAC described further in this analysis.

Diesel Particulate Matter

DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 5 percent of total DPM.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that approximately 70 percent of the cancer risk that the average Californian faces from breathing TACs stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA’s assessment, CARB estimates that diesel-particle levels measured in California’s air in 2000 could cause 540 “excess” cancers (beyond what would occur if there were no diesel particles in the air) in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (OEHHA – ALA, 2001).

Airborne Fungus (*Coccidioides immitis*)

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop on the skin. One important fact to mention is that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease require specific laboratory tests such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum or body fluid sample; (2) growing a culture of CI from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called *coccidioidin* or *spherulin*), which indicate prior exposure to the fungus (Valley Fever Center for Excellence, 2022a).

Valley Fever is not contagious and, therefore, cannot be passed on from person to person. Most of those who are infected would recover without treatment within six months and would have a life-long immunity to the fungal spores. In severe cases, especially in those patients with rapid and extensive primary illness, those who are at risk for dissemination of disease, and those who have disseminated disease, antifungal drug therapy is used. The type of medication used and the duration of drug therapy are determined by the severity of disease and response to the therapy. The medications used include ketoconazole, itraconazole and fluconazole in chronic, mild-to-moderate disease, and amphotericin B, given intravenously or inserted into the spinal fluid, for rapidly progressive disease. Although these treatments are often helpful, evidence of disease may persist and years of treatment may be required (Valley Fever Center for Excellence, 2022b).

Table 4.3-3: Range of Valley Fever Cases, presents the range of Valley Fever cases based on information from the Valley Fever Center for Excellence.

TABLE 4.3-3: RANGE OF VALLEY FEVER CASES

Infection Classification	Percent of Total Diagnosed Cases
Not apparent	60 percent
Mild to Moderate	30 percent
Complications	5-10 percent
Fatal	less than 1 percent

SOURCE: Valley Fever Center for Excellence, 2022b.

Asbestos

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. In addition, naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to information provided by the Department of Conservation Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present (CDOC, 2000).

Coronavirus Disease 2019

Coronavirus Disease 2019 (COVID-19) is a new disease, caused by a novel (or new) human coronavirus that has not previously been seen in humans. The first known case of COVID-19 was confirmed in the United States on January 20, 2020 (Holshue, et al, 2020). There are many types of human coronaviruses, including some that commonly cause mild upper-respiratory tract illnesses. COVID-19 is a respiratory illness that can spread from person to person. According to the Center for Disease Control (CDC), older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness. Symptoms may appear 2 to 14 days after the exposure to the virus and may include, but are not limited to: fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, and diarrhea (CDC, 2021a). According to the CDC, COVID-19 is believed to spread between people who are in close contact with one another (within about 6 feet) through respiratory droplets produced when an infected person coughs, sneezes, or talks (CDC, 2021b). COVID-19 research and causality is still in the beginning stages. A nationwide study by Harvard University found a linkage between long term exposure to PM_{2.5} (averaged from 2000 to 2016) as air pollution and statistically significant increased risk of COVID-19 death in the United States (Harvard, 2020).

4.3.3 Regulatory Setting

In California, air quality is regulated by several agencies, including EPA, CARB, and local air districts such as the SJVAPCD. Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, some State and local regulations may be more stringent than federal regulations. The project site is located within the SJVAB, which is under the jurisdiction of the SJVAPCD. SJVAPCD has developed CEQA guidance for assessing air quality impacts. In addition, Kern County has its own CEQA Guidelines for assessing air quality impacts.

Federal

U.S. Environmental Protection Agency

The principal air quality regulatory mechanism on the federal level is the CAA and in particular, the 1990 amendments to the CAA, and the NAAQS that it establishes. These standards identify levels of air quality for “criteria” pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants include ozone, CO, NO₂ (which is a form of NO_x), SO₂ (which is a form of SO_x), PM₁₀, PM_{2.5}, and lead. EPA also has regulatory and enforcement jurisdiction over emission sources beyond State waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking. EPA’s primary role at the State level is to oversee the State air quality programs. EPA sets federal vehicle and stationary source emission standards and oversees approval of all State Implementation Plans (SIP), as well as providing research and guidance in air pollution programs. The SIP is a State level document that identifies all air pollution control programs within California that are designed to meet the NAAQS.

State

California Air Resources Board

CARB, a department of the California Environmental Protection Agency (Cal/EPA), oversees air quality planning and control throughout California by administering the state implementation plan (SIP). Its primary responsibility lies in ensuring implementation of the 1989 amendments to the CCAA, responding to the federal CAA requirements and regulating emissions from motor vehicles sold in California. CARB also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish the CAAQS, and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same criteria pollutants as the federal CAA, and also include sulfates, visibility reducing particulates, hydrogen sulfide and vinyl chloride (there are currently no NAAQS for these latter pollutants). They are also generally more stringent than the national standards in most cases, although recently promulgated NAAQS for 1-hour NO₂ and SO₂ can in some instances be more stringent than the respective CAAQS.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics “Hot Spots” Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a

formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into their local air basin. Each APCD and air quality management districts (AQMDs) in the State ranks the data into high, intermediate and low priority categories. When considering the ranking, the potency, toxicity, quantity, volume and proximity of the facility to receptors are given consideration by an air district.

CARB also has on- and off-road engine emission-reduction programs that would indirectly affect the project's emissions through the phasing in of cleaner on- and off-road engines. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a statewide program to operate their equipment which must meet specified program emission requirements, throughout California without having to obtain individual permits from local air districts. Since the project is not proposing to install any applicable stationary sources, the AB 2588 program would not apply to the project.

In 2007, CARB enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (13 CCR Article 4.8, Chapter 9, Section 2449). This regulation provides target emission rates for particulate matter and NO_x emissions for owners of fleets of diesel-fueled off-road vehicles. It applies to equipment fleets of three specific sizes, and the target emission rates are reduced over time with full implementation by 2023 for large and medium fleets and 2028 for small fleets.

Title V and Extreme Designation

Title V of the CAA, as amended in 1990, creates an operating permit program for certain defined sources. In general, owner/operators of defined industrial or commercial sources that emit more than 25 tons per year (tpy) of NO_x and ROG must process a Title V permit. In "Extreme Designation" areas, the definition of a major source which requires Title V permitting, changes from 25 tpy to 10 tpy. This change results in more businesses having to comply with Title V permitting requirements under the Extreme nonattainment designation.

Title V does not impose any new air pollution standards, require installation of any new controls on the affected facilities, or require reductions in emissions. Title V does enhance public and EPA participation in the permitting process and requires additional record keeping and reporting by businesses, which results in significant administrative requirements.

California Renewables Portfolio Standard Program

Established in 2002 under SB 1078 and accelerated by SB 107 [2006] and SB 2 [2011], California's Renewable Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. In 2015, SB 350 further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. The California Public Utilities Commission (CPUC) and the California Energy Commission are jointly responsible for implementing the program. While not assumed in the analysis below, the legislature is likely to increase the existing RPS requirements; more specifically, Senate Bill 100 [2017] proposes to require a 50 percent renewable resource target by December 31, 2026, and 60 percent by December 31, 2030.

California Air Toxics “Hot Spots” Information and Assessment Act (AB 2588)

Enacted in 1981, AB 2588 is a state-wide program that requires facilities that exceed recommended Office of Environmental Health Hazards Assessment (OEHHA) levels to reduce risks to acceptable levels. Typically, during construction and operation diesel trucks and/or equipment generate diesel emissions. Diesel exhaust is composed of particulate matter and gases that contain potentially cancer-causing substances. DPM emissions include over 40 substances listed by the EPA as hazardous air pollutants, and/or by CARB as TACs. CARB adopted a comprehensive diesel risk reduction plan in 2000 with a goal of reducing DPM emissions associated with health risk by 85 percent by 2020.

California State Implementation Plan

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The EPA has the responsibility to review all State Implementation Plans to determine if they conform to the requirements of the CAA. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the EPA for approval and publication in the Federal Register.

Local

Kern County General Plan

The goals, policies, and implementation measures in the Kern County General Plan (Kern County, 2009) applicable to air quality as related to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below.

Chapter 1. Land Use, Conservation, and Open Space Element

1.10.2 Air Quality

Policies

Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.

- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:
- (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
- Policy 21: The County shall support air districts efforts to reduce PM₁₀ and PM_{2.5} emissions.
- Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

Implementation Measures

- Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.
- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
1. Minimizing idling time.
 2. Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
1. Pave dirt roads within the development.
 2. Pave outside storage areas.
 3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
 4. Use of alternative fuel fleet vehicles or hybrid vehicles.
 5. Use of emission control devices on diesel equipment.
 6. Develop residential neighborhoods without fireplaces or with the use of
 7. Environmental Protection Agency certified, low emission natural gas fireplaces.
 8. Provide bicycle lockers and shower facilities on site

9. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
10. The use and development of park and ride facilities in outlying areas.
11. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM₁₀ control measures as conditions of approval for subdivision maps, site plans, and grading permits.

Chapter 5. Energy Element

Solar Energy Development

Policies

- Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.
- Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

San Joaquin Valley Air Pollution Control District

The SJVAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. To this end, the SJVAPCD implements air quality programs required by State and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The SJVAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within Merced, San Joaquin, Stanislaus, Madera, Fresno, Kings, and Tulare Counties, and the San Joaquin Valley portion of Kern County.

The SJVAPCD has prepared several air quality attainment plans to achieve the O₃ and particulate matter standards, the most recent of which include the *2013 Plan for the Revoked 1-Hour Ozone Standard* (SJVAPCD, 2013), *2007 PM₁₀ Maintenance Plan and Request for Redesignation* (SJVAPCD, 2007), *2012 PM_{2.5} Plan* (SJVAPCD, 2012), *2015 Plan for the 1997 PM_{2.5} Standard* (SJVAPCD, 2015b), *2016 Ozone Plan for 2008 8-Hour Ozone Standard* (SJVAPCD, 2016), *2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards* (SJVAPCD, 2018b), and *2020 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan* (SJVAPCD, 2020).

Air Quality Conformity Determination for Transportation Plans and Programs

The CAA amendments of 1990 require a finding to be made stating that any project, program, or plan subject to approval by a metropolitan planning organization conforms to air plans for attainment of air quality standards. Kern Council of Governments (COG) is designated the Regional Transportation Planning Agency and Metropolitan Planning Organization for Kern County. In that capacity, Kern COG models air quality projections on population projections in conjunction with current general plan designations and estimated vehicle miles as well as the current Regional Transportation Plan (RTP) and the Federal

transportation plan for Kern County. These results are compared to pollutant budgets for each basin approved by EPA in the 1999 base year. Kern County is contained within two air basins: San Joaquin Valley Air Basin and the Mojave Desert Air Basin. Each air basin has its own plans and pollutant budgets. Kern COG makes conformity findings for each air basin.

Kern County recently prepared a draft 8-hour ozone air quality conformity analysis to analyze Kern County's 2021 federally approved Federal Transportation Improvement Program (FTIP) and the 2018 RTP. The conformity findings conclude that all air quality conformity requirements have been met (Kern COG, 2021).

4.3.4 Impacts and Mitigation Measures

This section describes the impact analysis relating to air quality for the project. It describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Where warranted, measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

Methodology

The air quality significance criteria were developed considering the CEQA significance criteria developed by the local air quality district in the project area, approved CEQA air quality checklists, and considering other federal criteria. The analysis presented within this section is based on both qualitative and quantitative approaches for determining air quality impacts associated with construction, operation, and maintenance of the project. The findings in the Air Quality and Greenhouse Gas Emissions Study prepared for the project (located in Appendix C of this EIR), which was prepared in accordance with Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* documents (Kern County, 2006).

Air Quality Plan Consistency

As a component of the cumulative impact analysis, the County Air Quality Assessment guidance (Kern County, 2006) states that the following should be included in the consistency determination for existing air quality plans:

- Discuss project in relation to Kern COG conformity and traffic analysis zones (TAZs)
- Quantify the emissions from similar projects in the Ozone Attainment Plan for the applicable basin. Discuss the Ozone Attainment Plan for the applicable air district, development, and relation to regional basin, Triennial Plan, and SIP

Pollutant Emissions

The construction and operational emissions were estimated from several emissions models and associated spreadsheet calculations, depending on the source type and data availability. The primary emissions models used included CARB's on-road vehicle emission factor model (EMFAC) version 2017 and the California Emissions Estimator Model (CalEEMod). Construction and operational emissions were estimated using

project specific data and schedules within the models. Refer to Appendix C of this EIR for details on equipment fleet, hours of operation, vehicle miles traveled and other assumptions used.

Construction Emissions

County guidance states that an air quality assessment should include estimates of short-term construction emissions in tons per year (Kern County, 2006). The estimates must include site grading and building construction emissions, with comparison to the adopted County CEQA thresholds and the applicable air district (SJVAPCD for the project site) thresholds. Per the County's guidance, all assumptions should be clearly presented, including length of each construction phase, equipment that would be used during each phase, and the amount of soil disturbance, including any import or export of soil. The emission factors used to estimate emissions should be clearly documented, and the model output should be included in the report.

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and offsite sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). CalEEMod Version 2016.3.2 was used to estimate emissions from construction of the project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects, such as residential, commercial, and industrial facilities. The AQ model was performed in July 2021 using CalEEMod version 2016.3.2 just after the release of version 2020.4.0. Based on the comparison between the two versions and Emission Factor (EMFAC) models, it was determined version 2020.4.0 would yield similar results as version 2016.3.2 based on the size of the project and not necessary to use version 2020.4.0. CalEEMod input parameters, including the land use type used to represent the project and size, construction schedule, and anticipated construction equipment utilization, were based on information provided by the SJVAPCD, the project applicant, or default model assumptions if project specifics were unavailable.

Construction emissions consist of vehicle and equipment exhaust and fugitive dust. Construction of the project is anticipated to take approximately 12 months. Air emissions calculations were performed for both before and after the incorporation of Applicant-proposed Mitigation Measures MM 4.3-1 to MM 4.3-5. These mitigation measures include those typically required by Kern County for NO_x (compliance with applicable CARB and SJVAPCD rules) and PM₁₀ (watering program for dust control). See Appendix C) for a complete list of construction assumptions, including equipment, and vehicles. Details regarding the methods and activity assumptions by source type are provided below.

Off-Road Equipment. For the purpose of this project, off-road equipment is defined as equipment powered by an EPA defined non-road engine. The off-road equipment exhaust emissions were calculated with emission factors from the California Emissions Estimator Model (CalEEMod). The analysis with these CalEEMod emission factors provided the total peak emissions that would occur if all pieces of equipment were used on the same day. This is a conservative estimate and, therefore, represents a worst-case scenario. It is not likely that all equipment would be working at the same time, and, therefore, emissions would be lower than this worst-case scenario.

On-Road Vehicles and Trucks. EMFAC2017 emissions factors were applied to the estimated vehicle miles traveled for the project. Construction of the project would generate emissions associated with the transport of machinery and supplies to and from the site, emissions from trucks transporting materials and water to and from the site, other deliveries and emissions associated with worker trips.

Fugitive Dust Emissions. The following potential sources of fugitive dust were considered in the analysis:

- Site grading and other construction activities during the construction phases to prepare for installation of various project facilities were calculated with AP-42 factors;
- Vehicles and equipment driving on paved roads (both on- and off-site) during construction and operations were calculated with EMFAC2017 factors; and
- Vehicles and equipment driving on the unpaved, on-site, roads during operations were calculated with AP-42 factors.

Operational Emissions

Operational emissions associated with the proposed project were also calculated using EMFAC2017 and CalEEMod, version 2016.3.2. Long-term emissions result from operational mobile sources from new employees, cleaning of the solar panels, the Battery Energy Storage System (BESS) facilities and emergency backup generators. All assumptions and calculations are provided in Appendix C of this EIR.

Vehicle Emissions. Once placed into service, the project would be operated by approximately five permanent employees. The employees would monitor and report the performance of the project and conduct preventative and corrective maintenance. It should be noted that preventative maintenance kits and certain critical spares would be typically stored onsite, while all other components would be readily available from a remote warehouse facility. As such, vehicle trips associated with project operation and maintenance would be minimal. Additionally, mobile source emissions for water deliveries and panel washing for the project have been calculated and are figured into the approximate 480 miles travelled per day for foreman, journeyman, apprentice, and laborer, and a total miles per year of 54,000.

BESS Facility. The project may include a BESS. The BESS system would be connected to the power grid, and could be charged by the project and/or charged by energy from the electrical grid. The BESS facilities would not have any additional mobile trips, solid waste, or water usage attributed to them. The BESS operation emissions were calculated using CalEEMod.

Emergency Backup Generator Emissions. The project would include an emergency backup generator (Backup Generator). The Backup Generator would either be diesel or battery powered; for air emission modeling purposes it is assumed the backup generator would be diesel powered. The emergency Backup Generator would follow compliance with SJVAPCD and CARB rules and regulations. It is assumed that the emergency backup generator would be 100 horsepower. It is assumed the generator would run for 12 hours per year. The operational emissions of these emergency generators were calculated using CalEEMod.

Decommissioning Emissions

At such time as the project is decommissioned, equipment operation and site restoration activities would result in impacts to air quality. Given the assumption that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. It should be noted that this does not take into account any future improvement in technology or subsequent reductions in air emissions. Project decommissioning is projected to be shorter in duration than construction and take four to eight months to complete, instead of 12 months for construction. Therefore, decommissioning is assumed to be one-third of the predicted construction emissions. Mitigation measures related to the decommissioning of utility sized solar facilities are included as a requirement of all proposed

solar projects in Kern County, not just this project, in order to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County.

Ambient Air Quality Analysis

The Kern County *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* (Kern County, 2006) require a dispersion modeling analysis of the maximum 24-hour average concentrations of PM₁₀ and PM_{2.5} resulting from construction in comparison to applicable ambient air quality standards and thresholds; therefore, an ambient air quality analysis (AAQA) was performed for the project during construction using AERMOD.¹ The purpose of the AAQA is to determine whether the project's construction emissions would cause or contribute to exceedances of any CAAQS or NAAQS during construction. Dispersion modeling assumptions and results are provided in Appendix C of this EIR.

CO Hotspot

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO “hot-spots” may have a greater likelihood of developing adverse health effects. The potential for the project to result in localized CO impacts at intersections resulting from addition of its traffic volumes is assessed based on Kern County's suggested criteria, which recommends performing a localized CO impact analysis for intersections operating at or below level of service (LOS) E.

Visibility Impacts

The County guidance states that potential impacts to visibility should be evaluated for all industrial projects and any other projects, such as mining projects, that have components that could generate dust or emissions related to visibility.

Based on the Kern County guidelines, a visibility analysis not required since the project is not a large industrial stationary-source or mining project, and it would not have long-term operational components that could generate substantial dust or emission plumes related to visibility.

Coccidioides immitis Exposure

While there are no specific thresholds for the evaluation of potential *Coccidioides immitis* (Valley Fever) exposure, the potential for workers or area residents contracting Valley Fever as a result of the project is evaluated based on the anticipated earth-moving activities, and considers applicant-proposed measures and compliance with Rule 8021, Section 6.3, which requires development and implementation of a dust control plan to help control the release of the *Coccidioides immitis* fungus during construction activities.

Asbestos

There are no quantitative thresholds related to receptor exposure to asbestos. The project site is not located in an area where naturally occurring asbestos is likely to be present. Therefore, impacts associated with

¹ Since operational activities would be minimal, consisting of minor daily trip increases and maintenance activities, ambient air quality modeling was not performed.

exposure of construction workers and nearby sensitive receptors to asbestos are not anticipated and no further analysis is required.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist includes items taken from previous versions of Appendix G of the CEQA *Guidelines*. However, Appendix G was updated in 2018, resulting in minor changes to the checklist items. The analysis herein is based on the updated CEQA *Guidelines*, which differ slightly from the Kern County CEQA Implementation Document and Kern County Environmental Checklist.

The current CEQA *Guidelines* state that a project could potentially have a significant adverse effect to air quality if it would:

- a. Conflict with or obstruct implementation of the applicable air quality plan;
- b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. Specifically, if implementation of the project would exceed any of the following adopted thresholds:
 - i. SJVAPCD:
 - a. Operational and Area Sources:
 - 10 tons per year for ROG
 - 10 tons per year for NO_x
 - 15 tons per year for PM₁₀.
 - b. Stationary Sources – determined by District Rules
 - Severe nonattainment: 25 tons per year
 - Extreme nonattainment: 10 tons per year
 - c. Expose sensitive receptors to substantial pollutant concentrations;
 - Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
 - Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.
 - d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Project Impacts

Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.

In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used to form the applicable air quality plan and if the project implements all reasonably

available and feasible air quality control measures. The consistency with the Air Quality Management Plan (AQMP) is discussed below for construction and operation.

Air quality impacts are controlled through policies and provisions of the SJVAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations. The CCAA requires air pollution control districts with severe or extreme air quality problems to provide for a 5 percent reduction in nonattainment emissions per year. The Attainment Plans prepared for the SJVAPCD complies with this requirement. CARB reviewers approve or amend the document and forward the plan to EPA for final review and approval within the SIP.

Required Evaluation Guidelines

CEQA *Guidelines* and the CAA (Sections 176 and 316) contain specific references regarding the need to evaluate consistencies between the project and the applicable AQMP for the projects. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQMP:

Determination that an AQMP is being implemented in the area where the project is being proposed. SJVAPCD's most recently adopted air quality management plan is its current, modified 2016 8-hour AQMP that is approved by CARB and USEPA for the 2008 8-hour O3 standard.

The project must be consistent with the growth assumptions of the applicable AQMP. The Kern COG growth modelling for the 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) provides for future employment/population factors. The project would not introduce land uses that would generate vehicle trips or promote growth in the project area beyond what is projected in the Kern County General Plan and, therefore, incorporated into the AQMP.

The project must contain in its design all reasonably available and feasible air quality control measures. The project incorporates various policy and rule-required implementation measures that would reduce related emissions.

Because implementation of the project would not result in additional growth beyond what was anticipated by the Kern County General Plan and incorporated into the AQMP, conclusions may be drawn from the following criteria:

- The findings of the analysis conducted using Traffic Analysis Zones (TAZ) show that sufficient employment increase is planned for the project area such that new employment opportunities afforded by the project were included in the growth assumptions used to develop the AQMP.
- The primary source of emissions from the project would be from construction and operation vehicles that are licensed through the State and whose emissions are already incorporated into CARB's emissions inventory.

Construction

As noted in **Table 4.3-4: Short-Term (Construction) Project Emissions**, temporary unmitigated emissions during construction would not exceed the thresholds adopted by Kern County for any pollutants. Further, Mitigation Measures MM 4.3-1 and MM 4.3-2 would be required to reduce fugitive dust emissions by implementing exhaust reduction measures and a Fugitive Dust Control Plan, respectively. Exhaust reduction measures include equipment maintenance, idling restrictions, and compliance with CARB and

SJVAPCD rules which would lower pollutant emissions during construction activities. The project would not conflict with implementation of the air quality management plan.

Operation

In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used to form the applicable air quality plan. The land uses designated in the Kern County General Plan forms the basis for the growth assumptions in the air quality plans. The project would be consistent with the existing land use designations in the current Kern County General Plan and would not introduce a land use that would induce population or housing growth that could result in a substantial increase in vehicle miles traveled and associated criteria pollutant emissions. Operational emissions associated with the project would be those generated from mobile sources traveling to and from the project area, panel washing and maintenance, operation of the BESS system, and the emergency back-up generator. As shown below in **Table 4.3-5: Project Operational Emissions**, the project's long-term operational emissions would be well below SJVAPCD's applicable significance thresholds.

TABLE 4.3-4: SHORT-TERM (CONSTRUCTION) PROJECT EMISSIONS

Emissions Source	Pollutant (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Azalea Solar Facility	0.48	9.40	12.19	0.03	1.89	1.06
SJVAPCD Threshold	10	10	NA	NA	15	15
Is Threshold Exceeded?	No	No	NA	NA	No	No

NOTES:

Values may not add exactly due to rounding.

Particulate Matter Mitigation Measures include the following: water exposed surfaces two times daily, apply water during soil loading/unloading, manage haul road dust by watering two times daily, and reduce speed on unpaved roads to less than 15 miles per hour.

Assumptions used in the analysis are detailed in Appendix C.

SOURCE: S2S Environmental Resource Management, 2021.

TABLE 4.3-5: PROJECT OPERATIONAL EMISSIONS

Emissions Source	Pollutant (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Unmitigated Emissions						
Onsite Emissions	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Offsite Emissions	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fugitive Dust Emissions	-	-	-	-	<0.01	<0.01
Total Unmitigated Operational Emissions	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SJVAPCD Threshold	10	10	NA	NA	15	15
Is Threshold Exceeded?	No	No	NA	NA	No	No

NOTES:

Values may not add exactly due to rounding.

Assumptions used in the analysis are detailed in Appendix C.

SOURCE: S2S Environmental Resource Management, 2021.

Further, the solar power generation system of the project could also function to reduce the air pollutant emissions within the SJVAB to the extent that the power generated is used to offset power production from fossil fueled power plants within (or contributory to) the SJVAB. This power production is not projected within the existing air quality plans, and so the solar facility could further aid in reducing air pollutant emissions and increase the potential for attainment of the Ozone AQMP/SIP. Thus, the project would result in a positive cumulative benefit related to air quality because it would introduce a non-fossil-fuel-based energy source. This would have the indirect effect of displacing emissions otherwise occurring at natural gas and coal-fired power plants. This would help offset the projects contribution to the regions emissions during operation.

Once the project is operational, emissions would be limited to vehicle exhaust and re-entrained road dust associated with maintenance activities, including water truck trips for panel cleaning and periodic materials deliveries, as well as employee vehicle trips. As shown in **Table 4.3-5**, Above, the annual operational emissions would not exceed the SJVAPCD thresholds adopted by Kern county. Therefore, the project would not conflict with the SJVAPCD's Ozone AQMP. and implementation of the project would not obstruct implementation of an air quality plan during operation and impacts would be less than significant.

Decommissioning

The project is anticipated to operate for 30 to 35 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time if its Power Purchase Agreement (PPA) is not extended, or the project otherwise ceases operation. The project will be required to develop a decommissioning plan and financial assurances for review and approval by the Kern County Planning and Natural Resources Department. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, State, and County regulations.

At such time as the facility is decommissioned, equipment operation and site restoration activities could result in impacts to air quality. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. Since the construction emission would not exceed the SJVAPCD thresholds, decommissioning activities would not exceed SJVAPCD thresholds. Therefore, operation of the project would not obstruct implementation of an air quality plan and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the interconnection facilities to the Arco Substation for the transport of renewable energy is not anticipated to conflict with any applicable air quality management plan. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. PG&E's best management practices and APMs include compliance with all

applicable state and federal laws and regulations during construction and operation. The existing access road from King Rd from the project site would require minimal grading to level and gravel. Neither this or the Interconnection Facilities would conflict with applicable air quality management plan.

Mitigation Measures

MM 4.3-1: To control NO_x and PM emissions during construction, the project proponent/operator and/or its contractor(s) shall implement the following measures during construction of the project, subject to verification by the County:

- a. Off-road equipment engines over 25 horsepower shall be equipped with EPA Tier 3 or higher engines, unless Tier 3 construction equipment is not locally available.
- b. All equipment shall be maintained in accordance with the manufacturer's specifications.
- c. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- d. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes.
- e. Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment.
- f. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NO_x emissions.
- g. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines.
- h. Existing electric power sources shall be used to the extent feasible. This measure would minimize the use of higher polluting gas or diesel generators.
- i. The hours of operation of heavy-duty equipment and/or the quantity of equipment in use shall be limited to the extent feasible.

MM 4.3-2: To control fugitive PM emissions during construction, prior to the issuance of grading or building permits and any earthwork activities, the project proponent shall prepare a comprehensive Fugitive Dust Control Plan for review by the Kern County Planning and Natural Resources Department. The plan shall include all SJVAPCD-recommended measures, including but not limited to, the following:

- a. Soil being actively excavated, trenches, graded, or undergoing earthmoving activities shall be pre-watered and during work, sufficiently watered to prevent excessive dust. Wind barriers also may be erected to reduce wind driven erosion. Watering shall occur as needed with complete coverage of disturbed soils areas. Watering shall take place a minimum of three times daily where soil is being actively disturbed, unless dust is otherwise controlled by rainfall or use of a dust suppressant.
- b. Vehicle speed for all on site (i.e., within the project boundary) construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs

identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.

- c. Vehicle speeds on all offsite unpaved project-site access roads (i.e., outside the project boundary) construction vehicles shall not exceed 25 mph. Signs identifying vehicle speed limits shall be posted along unpaved site access roads and at the site entrance/exit.
- d. All onsite unpaved roads and offsite unpaved public project-site access road(s) shall be effectively stabilized of dust emissions using water or SJVAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys). Reclaimed (non-potable) water shall be used to the extent available and feasible.
- e. The amount of the disturbed area (e.g., grading, excavation) shall be reduced and/or phased where possible.
- f. All disturbed areas shall be sufficiently watered or stabilized by SJVAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available and feasible.
- g. All clearing, grading, earth moving, and excavation activities shall cease during periods when dust plumes of 20 percent or greater opacity affect public roads or nearby occupied structures.
- h. All disturbed areas anticipated to be inactive for periods of 30 days or more shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an SJVAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips.
- i. All active and inactive disturbed surface areas shall be stabilized, where feasible.
- j. Equipment and vehicle access to disturbed areas shall be limited to only those vehicles necessary to complete the construction activities.
- k. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil-disturbing activities.
- l. Stockpiles of dirt or other fine loose material and bulk materials shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20 percent opacity. If necessary and where feasible, three-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust.

- m. Water or approved dust suppressant shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust.
- n. Where acceptable to the fire department and feasible, weed control shall be accomplished by mowing (either mechanical or via livestock grazing) instead of disking, thereby leaving the ground undisturbed and with a mulch covering.
- o. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least six inches of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114.
- p. Gravel pads, grizzly strips, or other material track-out control methods approved for use by SJVAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.
- q. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or rocks/grates at the project entry points shall be used, when necessary, to remove soil deposits and minimize the track-out/deposition of soil onto nearby paved roadways.
- r. During construction paved road surfaces adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.
- s. Portable equipment, 50 horsepower or greater, used during construction activities (e.g., portable generators) shall require California statewide portable equipment registration (issued by CARB) or an SJVAPCD permit.
- t. The Fugitive Dust Control Plan shall identify a designated person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures, as necessary, to minimize the transport of dust off site and to ensure compliance with identified fugitive dust control measures. Contact information for a hotline shall be posted on site should any complaints or concerns be received during working hours and holidays and weekend periods when work may not be in progress. The names and telephone numbers of such persons shall be provided to the SJVAPCD Compliance Division prior to the start of any grading or earthwork.
- u. Signs shall be posted at the project site entrance and written notifications shall be provided a minimum of 30 days prior to initiation of project construction to residential land uses located within 1,000 feet of the project site. The signs and written notifications shall include the following information: (a) Project Name; (b) Anticipated Construction Schedule(s); and (c) Telephone Number(s) for designated construction activity monitor(s) or, if established, a complaint hotline.
- v. The designated construction monitor shall document and immediately notify SJVAPCD of any air quality complaints received. If necessary, the project operator and/or contractor will coordinate with SJVAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.

- MM 4.3-3** Prior to the issuance of building and grading permits, the project proponent shall provide the Kern County Planning and Community Development Department with proof that an Indirect Source Review application has been approved by the San Joaquin Valley Air Pollution Control District. The project proponent shall enter into a developer agreement with SJVAPCD and conduct an air impact assessment as required by SJVAPCD Rule 9510. Offsite emission reduction fees shall be calculated, as dictated by Rule 9510, to reduce construction-related NO_x emissions by 20% and PM₁₀ emissions by 45%.
- MM 4.3-4** Prior to the issuance of grading or building permits, the project proponent shall submit documentation to demonstrate how the following grading measures will be implemented during construction activities:
- a. A minimum of 15 days prior to commencement of construction activities, the project proponent shall provide a copy of the construction and grading schedule to the public through direct mailing to all parcels within 1,000 feet of the project site. The notices shall include the construction schedule and a telephone number where complaints can be registered. Signs legible at a distance of 50 feet shall also be posted at the construction site through construction activities and will include the same details as the notices.
 - b. The project proponent shall establish a “Construction Coordinator.” The construction coordinator shall be responsible for the following:
 1. Responding to any local complaints about construction activities. The construction coordinator shall determine the cause of the construction complaint and shall be required to implement reasonable measures such that the complaint is resolved.;
 2. Ensuring all appropriate construction notices have been made available to the public and all appropriate construction signs have been installed; and
 3. Providing to the Kern County Planning and Community Development Department a weekly log of all construction -related complaints (i.e. blowing dust, inability to access parcels, etc...) during project construction activities and the measures that were undertaken to address those concerns.
- MM 4.3-5** Prior to the issuance of grading or building permits, the project proponent shall submit a comprehensive Phased Grading Plan for review and approval by the Kern County Planning and Community and Community Development Department. The Phased Grading Plan shall include the following:
- a. Identify a comprehensive grading schedule for the entire project site.
 - b. Minimizing all grading activities to those areas necessary for project access and installation of solar panels and other associated infrastructure associated with the solar facility.
 - c. Identify, in addition to those measures required by the San Joaquin Valley Air Pollution Control District, all measures being undertaken during construction activities and operational activities to ensure dust being blown off site is minimized. Measures may include, but are not limited to:
 1. Increased use of water and or use of dust suppressant;

2. Pre-seeding and/or use of wood chips as permitted by the San Joaquin Valley Air Pollution Control District; and
3. Construction of dust screening around the project site.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.3-1 and MM 4.3-5, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.3-2: Construction and operation of the project would expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are particularly sensitive to air pollution because they are persons that are ill, elderly, or have lungs that are not fully developed. Locations where such persons reside, spend considerable amount of time, or engage in strenuous activities are also referred to as sensitive receptors. Typical sensitive receptors include inhabitants of long-term healthcare facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers, and athletic facilities. As detailed in the sensitive receptors discussion under Section 4.3.2, the closest sensitive receptor is approximately 0.67 miles east of the project borders and no other sensitive receptors are identified within the project vicinity. Implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8 that would minimize emissions including NO_x, CO, ROG, and PM emission from construction equipment, minimize ground disturbance and dust through implementation of a Fugitive Dust Control Plan to include watering and ceasing construction during high winds. These measures as well as other available and feasible air quality control measures would be implemented to reduce emissions associated with construction.

Toxic Air Contaminants (TACs)

The primary TAC of concern for this project would be DPM emitted within the project site from the construction, operation phases and decommissioning of the project. Projects are considered for potential health risks wherein a new or modified source of TACs is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to TACs.

Construction activities are anticipated to involve the operation of diesel-powered equipment and would generate short-term DPM air quality impacts. In 1998, CARB identified diesel exhaust as a TAC. SJVAPCD does not consider construction-equipment-diesel-related cancer risks to be an issue because of the short-term nature of construction activities. Cancer health risks associated with exposure to diesel exhaust typically are associated with chronic exposure, in which a 70-years, acute exposure (i.e. exposure periods of 2 to 3 years) to diesel exhaust typically are not anticipated to result in an increased health risk because acute exposure typically does not result in the exposure concentrations necessary to result in a health risk.

Activities associated with construction and decommissioning would each take place over approximately 12 months. Health impacts associated with exposure to diesel exhaust from project construction are not anticipated to be significant because construction activities are expected to last well below the 70-year exposure period used in health risk assessments. The potential for operational effects over the life of the

project also would not emit a substantial volume of TACs including diesel exhaust because heavy equipment would rarely be required. Additionally, there are no sensitive receptors in the project area and the nearest residence is approximately 0.67 miles away. Thus, neither construction or operation of the project are anticipated to result in an elevated cancer risk to exposed persons. As such, the health risk impact attributed to the construction, operation and maintenance, and eventual decommissioning of the project would not exceed SJVAPCD and OEHHA thresholds. Impacts would be less than significant and mitigation in this regard is not required.

Ambient Air Quality Analysis

The USEPA and CARB have established NAAQS and CAAQS at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety. Further, California air districts, like the SJVAPCD, have established emission-based thresholds that provide project-level estimates of criteria air pollutant quantities that air basins can accommodate without affecting the attainment dates for the NAAQS. Accordingly, elevated levels of criteria air pollutants as a result of a project's emissions could cause adverse health effects associated with these pollutants. As noted previously, the SJVAPCD is a nonattainment area for the State 1-hour O₃, 8-hour O₃, PM₁₀, standards and is a nonattainment area for National 8-hour O₃, and PM_{2.5} standards.

Project Health Effects of Criteria Air Pollutants

The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon the size and distribution of emission sources in the region and meteorological factors such as wind, sunlight, temperature, humidity, rainfall, atmospheric pressure, and topography. The air districts such as SJVAPCD establish and recommend that the analyses of criteria air pollutants use CEQA significance thresholds that are set at emission levels tied to the region's attainment status, based on emission levels at which stationary pollution sources permitted by the air district must offset their emissions. Such offset levels allow for growth while keeping the cumulative effects of new sources at a level that will not impede attainment of the NAAQS. The health risks associated with exposure to criteria pollutants are evaluated on a regional level, based on the region's attainment of the NAAQS. The mass emissions significance thresholds used in CEQA air quality analysis are not intended to be indicative of human health impacts that a project may have.

Of particular note in this regard are sensitive receptors that can be exposed to a substance through several different pathways. Typically, the primary environmental exposure pathway is direct inhalation of gaseous and particulate air pollutants. However, there also is the potential for exposure via non-inhalation pathways due to the deposition of particulate pollutants (DPM) in the environment. Based on the emission calculations for the construction and operational phase of the project, the project's construction emissions do not indicate that the project would cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels.

To determine the potential for exposure levels and overall project contributions or effects it could have on air quality, the ambient air quality assessment was performed to determine if the project has the potential to impact local ambient air quality through an exceedance of the ambient air quality standards or make a substantial contribution to an existing or projected air quality standard. It was found that construction emissions would not exceed SJVAPCD thresholds.

The assessment was based on outputs from CalEEMod version 2016.3.2 and used an average daily emission based on the pounds per day and total tons per year for each pollutant. The analysis was performed based on the guidelines of the SJVAPCD Ambient Air Quality Analysis – Project Daily Emissions. A threshold/screening level of 100 pounds per day of any criteria pollutant after all enforceable mitigation measures are implemented as based on the Guidance for Assessing and Mitigating Air Quality Impacts was used.

The following tables show the summary emissions during the construction phase calculated based on the Maximum Daily Criteria Pollutant Emissions. **Table 4.3-6: 2022 Seasonal Construction – Maximum Per Day**; **Table 4.3-7: 2022 Seasonal Construction – Mitigated Maximum Per Day**, and **Table 4.3-8: Average Daily Construction Emissions – Mitigated**, below show these emission values.

TABLE 4.3-6: 2022 SEASONAL CONSTRUCTION – MAXIMUM PER DAY

Project Construction	Maximum Daily Emissions (lb/day)						
	ROG	CO	NO _x	Sox	DPMP M10	Total PM10	PM2.5
Summer Season Construction	21.29	183.51	159.29	0.52	6.64	92.10	28.20
Winter Season Construction	21.59	172.42	161.28	0.49	6.64	92.10	28.20
Maximum Daily Emissions (lb/day)	21.59	183.51	161.28	0.52	6.64	92.10	28.20

Notes:

N/A = Not Available (i.e. no significance threshold exists)

a Emissions were calculated using the CalEEMod Model, version, 2016.3.2. Calculation details are provided in the provided in the CalEEMod output filed in Appendix C. Maximum annual emissions for the project are assumed to occur over a single calendar year and are compared to SJVAPCD Significance Threshold.

b Total PM10 and PM 2.5 emissions represent both exhaust and fugitive dust emissions.

c Average daily emissions based on the total tons per year for each pollutant divided by the total number of days, per SJVAPCD Ambient Air Quality Analysis – Project Daily Emissions. <http://valleyair.org/transportation/CEQA%20Rules/Ambient-Air-Quality-Analysis-Project-Daily-Emissions-Assessment.pdf>

d Impacts are considered insignificant when on-site emission increases from construction activities or operational activities do not exceed the 100 pounds per day screening level of any criteria pollutant after implementation of all enforceable mitigation measures. Page 93 of Guidance for Assessing and Mitigating Air Quality impacts, dated March 19, 2015.

TABLE 4.3-7: 2022 SEASONAL CONSTRUCTION – MITIGATED MAXIMUM PER DAY

Project Construction	Mitigated Maximum Daily Emissions (lb/day)*						
	ROG	CO	NO _x	SO _x	DPM PM10	Total PM10	PM2.5
Summer Season Construction	21.29	183.51	159.29	0.52	6.64	92.10	28.20
Winter Season Construction	21.59	172.42	161.28	0.49	6.64	92.10	28.20
Maximum Daily Emissions (lb/day)	21.59	183.51	161.28	0.52	6.64	92.10	28.20

Notes: Notes are the same as in Table 4.3-6, above.

TABLE 4.3-8: AVERAGE DAILY CONSTRUCTION EMISSIONS – MITIGATED

Project Construction	Mitigated Average Daily Emissions (lb/day)*						
	ROG	CO	NO _x	SO _x	DPM PM10	Total PM10	PM2.5
Construction Year 2022	11.43	95.29	89	0.27	3.66	15.07	9.34

Maximum Daily Emissions (lb/day)	11.43	95.29	89	0.27	3.66	15.07	9.34
SJVAPCD Screening Level	100	100	100	100	100	100	100
Exceeds Screening Level (Y/N?)	N	N	N	N	N	N	N

Notes: Notes are the same as in **Table 4.3-6**, above.

Table 4.3-9: Project Construction Maximum Annual Emissions, and **Table 4.3-10: Project Construction Emissions by Phase**, provide a breakdown of the emissions of criteria pollutants in tons that would be emitted through the construction year as well as the emissions that would be emitted by phase of construction over the same time period.

Tables 4.3-11: Project Construction Annual Emission with Mitigation and **Table 4.3-12: Project Construction Phases – Mitigated Emissions by Phase**, provides a breakdown of the emissions of criteria pollutants in tons that would be emitted through the construction year as well as the emissions that would be emitted by phase of construction over the same time period after mitigation is implemented.

As discussed earlier and shown in **Table 4.3-4** through **Table 4.3-12**, while the project would result in emissions of both ROG, CO, NO_x, SO_x, DPM PM₁₀, Total PM₁₀, and PM_{2.5}, during construction and operation, the emissions would not exceed or violate any of the thresholds set by SJVAPCD or Kern County.

Thus, regarding the health effects of criteria air pollutants, the project’s potential to result in regional health effects associated with ROG, NO_x, PM₁₀ and PM_{2.5} on specific vulnerable populations is anticipated to be less than significant. Additionally, because emissions would largely cease with exception of emissions from routine vehicle operations needed for maintenance, and the solar generation would not result in emissions, the effects of operation of the project also would be less than significant.

Criteria Air Pollutants

Sierra Club vs. County of Fresno (December 24, 2018)

In *Sierra Club V. County of Fresno* (S219783) (*Sierra Club*) the Supreme Court held that CEQA requires environmental impact reports to either (i) make a “reasonable effort” to substantively connect the estimated amount of a given air pollutant a project will produce and the health effects associated with that pollutant, or (ii) explain why such an analysis is infeasible (6 Cal.5th at 1165-66). However, the Court also clarified that that CEQA “does not mandate” that EIRs include “an in-depth risk assessment” that provides “a detailed comprehensive analysis ... to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population wide health risks associated with those levels of exposure.” *Id.* at 1665. However, correlating the project’s criteria air pollutant to specific health impacts, particularly with respect to O₃ is not possible because there is no feasible or established scientific method to perform such analysis. This conclusion is supported by both the SJVAPCD and the SCAQMD who have determined that this type of analysis is speculative and infeasible and there are no unique issues for the SJVAPCD that would make this analysis invalid.

TABLE 4.3-9: PROJECT CONSTRUCTION ANNUAL EMISSIONS

Project Construction	Maximum Annual Emissions (tons/year)						
	ROG	CO	NO _x	SO _x	DPM PM ₁₀	Total PM ₁₀	PM _{2.5}
Construction Year 2022 ^a	0.14	1.11	1.14	0.00	0.05	0.18	0.14
Maximum Annual Emissions	0.14	1.11	1.14	0.00	0.05	0.18	0.14
SJVAPCD Significance Threshold (tons/yr)	10	100	10	27	N/A	15	15
Exceeds Threshold (Y/N)?	N	N	N	N	N	N	N

TABLE 4.3-10: PROJECT CONSTRUCTION PHASES – EMISSIONS BY PHASE

Construction Phases	Emissions by Phase (tons/phase)							
	ROG	CO	NO _x	SO _x	DPM PM ₁₀	Total PM ₁₀	PM _{2.5}	Duration (Days)
PV Array Construction Phase								
Demolition	0.012	0.108	0.128	0.000	0.005	0.011	0.006	7
Site Prep/Survey/Grading /Fencing/Staging	0.034	0.229	0.313	0.001	0.012	0.057	0.082	60
PV Array Mechanical Installation	0.033	0.280	0.222	0.001	0.010	0.038	0.017	180
PV Array Electrical Installation	0.021	0.190	0.167	0.001	0.007	0.030	0.013	100
Substation and transmission Line Installation	0.020	0.172	0.168	0.001	0.006	0.029	0.012	120
Battery Storage Installation	0.015	0.135	0.138	0.00	0.005	0.019	0.009	90
Construction project Management	0.00	0.00	0.00	0.00	0.00	0.00	0.00	350
2022 Construction Total	0.14	1.11	1.14	0.00	0.05	0.18	0.14	350

Notes: N/A/= Not available (i.e. no significance threshold exists).

^a See note a. **Table 4.3-6**, above, See note b. **Table 4.3-6**, above, See note c. **Table 4.3-6**, above, See note d. **Table 4.3-6**, above.

^b Construction off-road mitigation measures include 1) Dust suppressant material which yields 84% PM10 control efficiency and 2) limiting vehicle speed to 15 mph 44% PM10 control efficiency, per WRAP Fugitive Dust Handbook, Sept. 2006. Applying water to the roadways twice daily will yield 55% fugitive dust control, per the CalEEMod mitigation measures defaults. Off-road mitigation measures also include use of engine controls, late model engines and low emission diesel products for 15% NO_x reduction, per CARB “Strategies for Reducing Emissions from Off-Road Construction Equipment,” January 2021.

TABLE 4.3-11: PROJECT CONSTRUCTION ANNUAL EMISSIONS WITH MITIGATION

Project Construction	Mitigated Maximum Annual Emissions (tons/year)						
	ROG	CO	NO _x	SO _x	DPM PM ₁₀	Total PM ₁₀	PM _{2.5}
Construction Year 2022^a	1.45	12.19	9.40	0.03	0.46	1.89	1.06
Maximum Annual Emissions (tons/yr)	1.45	12.19	9.40	0.03	0.46	1.89	1.06
SJVAPCD Significance Threshold (tons/yr)	10	100	10	27	N/A	15	15
Exceeds Threshold (Y/N)?	N	N	N	N	N	N	N

TABLE 4.3-12: PROJECT CONSTRUCTION PHASES –MITIGATED EMISSIONS BY PHASE

Construction Phases	Mitigated Emissions by Phase (tons/phase)							
	ROG	CO	NO _x	SO _x	DPM PM ₁₀	Total PM ₁₀	PM _{2.5}	Duration (Days)
PV Array Construction								
Demolition	0.012	0.108	0.128	0.000	0.005	0.011	0.006	7
Site Prep/Survey/Grading/Fencing/Staging	0.145	0.964	1.123	0.003	0.051	0.239	0.34	60
PV Array Mechanical Installation	0.676	5.732	3.865	0.014	0.212	0.775	0.349	180
PV Array Electrical Installation	0.252	2.231	1.670	0.007	0.080	0.350	0.147	100
Substation and transmission Line Installation	0.312	2.696	2.235	0.009	0.094	0.453	0.184	120
Battery Storage Installation	0.051	0.458	0.398	0.001	0.017	0.064	0.029	90
Construction project Management	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022 Construction Total	1.45	12.19	9.40	0.03	0.46	1.89	1.06	350

Notes: N/A= Not available (i.e. no significance threshold exists).

^a See note a. **Table 4.3-6**, above, See note b. **Table 4.3-6**, above, See note c. **Table 4.3-6**, above, See note d. **Table 4.3-6**, above.

^b Construction off-road mitigation measures include 1) Dust suppressant material which yields 84% PM₁₀ control efficiency and 2) limiting vehicle speed to 15 mph 44% PM₁₀ control efficiency, per WRAP Fugitive Dust Handbook, Sept. 2006. Applying water to the roadways twice daily will yield 55% fugitive dust control, per the CalEEMod mitigation measures defaults. Off-road mitigation measures also include use of engine controls, late model engines and low emission diesel products for 15% NO_x reduction, per CARB “Strategies for Reducing Emissions from Off-Road Construction Equipment,” January 2021.

Writing as amicus curiae in *Sierra Club*, the SJVAPCD explained that “[t]he health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the (National Ambient Air Quality Standards [NAAQS]). Accordingly, while the type of individual facility/health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task” (SJVAPCD, 2015).

Instead, the SJVAPCD explained that it assesses a project’s potential to exceed NAAQS by evaluating the project’s compliance with district thresholds of significance, which are measured in mass emissions (SJVAPCD, 2015). As explained by SJVAPCD, its thresholds are based on factual, scientific data and have been set at a level that ensures that NAAQS will not be exceeded, taking into consideration all cumulative emission sources (SJVAPCD, 2015). The SJVAPCD explained that attempting to connect criteria pollutant emissions to localized health impacts will “not yield reliable information because currently available modeling tools are not well suited for this task” (SJVAPCD, 2015). Available models are only equipped to model the impact of all emissions sources on an air basin-wide or regional basis, not on a project-level basis, and “[r]unning the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved” (SJVAPCD, 2015).

This inability to “accurately ascertain local increases in concentration” of mass emissions and then to further link emissions with health effects is particularly true for O₃ and its precursors NO_x and ROG and VOC; O₃ is not directly emitted into the air, but is instead formed as ozone precursors undergo complex chemical reactions through sunlight exposure (SJVAPCD, 2015). Given the complex nature of this process, and the fact that O₃ can be transported by wind over long distances, “a specific tonnage amount of NO_x or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area” (SJVAPCD, 2015). For this reason, the photochemical analysis for O₃ is done on a regional scale and it is inappropriate to analyze O₃ impacts at a local or project-level basis because a localized analysis would at most be speculative, and at worst be misleading. Speculative analysis is not required by CEQA (*CEQA Guidelines* Section 15145; *Laurel Heights Improvement Association V. Regents of the University of California* 1988).

The SJVAPCD also explained that the disconnect between the tonnage of precursor pollutants and the concentration of O₃ or particulate matter formed in a particular area is especially important to understand in considering potential health effects because it is the concentration, not the tonnage, that causes health effects (SJVAPCD, 2015). The SJVAPCD explained that even if a model were developed that could accurately assess local increases in concentrations of pollutants like O₃ and particulates, it would still be “impossible, using today’s models, to correlate that increase in concentration to a specific health impact” (SJVAPCD, 2015). The SJVAPCD stated that even a project with criteria pollutant emissions above its CEQA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine “whether and to what extent emissions from an individual project directly impact human health in a particular area” (SJVAPCD, 2015). The SJVAPCD explained that this is particularly true for development projects like the project, where most of the criteria pollutants derive from mobile and area sources and not stationary sources. The SCAQMD also, as amicus curiae in *Sierra Club*, made similar points, reiterating that “an agency should not be required to perform analyses that do not produce reliable or meaningful results” (SCAQMD, 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O₃, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to *all* regional increases (SCAQMD, 2015). With regard to particulate matter, the SCAQMD noted that while the CARB has created a methodology to predict expected mortality from large amount of PM_{2.5}, the primary author of the methodology has reported that it “may yield unreliable

results due to various uncertainties” and CARB staff has been directed by its Governing Board to reassess and improve it, which factor “also counsels against setting any hard-and-fast rule” about conducting this type of analysis (SCAQMD, 2015). The amicus briefs filed by SJVAPCD and SCAQMD in *Sierra Club* are attached as part of Appendix D of this EIR.

Regarding health effects of criteria air pollutants, the project’s potential to result in regional health effects associated with ROG, NO_x, PM₁₀ and PM_{2.5} on specific vulnerable populations cannot be calculated given existing scientific constraints. A scientific method to calculate the exact number of individuals in a vulnerable population that will get sick has not been developed and therefore, it is assumed localized health effects associated with NO_x, PM₁₀, and PM_{2.5} emissions from project implementation could occur. The project proposes the construction and operation of a large-scale utility solar project that would require dust-generating construction activities such as pile-driving, mowing, and grading, over a large area. Due to the open nature of the project site, blowing dust could occur and result in the dispersal of criteria air pollutants such as PM_{2.5} and potentially contribute to the transmission of respiratory diseases like COVID-19.

Since COVID-19 is understood to spread as result of close, person-to-person contact, especially within poorly ventilated indoor spaces, the likelihood of emissions from the proposed project directly increasing the spread of COVID-19 is remote. However, a nationwide study by Harvard University found a linkage between long term exposure to PM_{2.5} as air pollution and statistically significant increased risk of COVID-19 death in the United States (Harvard, 2020). Though construction dust suppression measures would be implemented as a requirement of Mitigation Measure MM 4.3-2, exposure to dust during construction could still occur which could increase the severity of the disease project employees and nearby residents to COVID-19 should they contract it. However, the vaccines for COVID-19 drastically reduce the likelihood of hospitalization, much less death, as a result of contracting COVID-19. In spite of a readily available COVID-19 vaccine supply in the United States, the COVID-19 pandemic is on-going as a result of low vaccination rates and mask compliance by unvaccinated individuals. People of color may also have a higher risk of getting sick or dying from COVID-19 (California Department of Public Health 2020) and may live in areas already burdened by air pollution (NRDC 2014). On-site workers and residents near project activities potentially could be exposed to increased levels of PM_{2.5} from project activities due to the emissions of PM_{2.5} from the project.

Therefore, in addition to implementation of Mitigation Measure MM 4.3 2, the project would implement Mitigation Measure MM 4.3-8, which requires implementation of a COVID-19 Health and Safety Plan in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates.

Therefore, implementation of Mitigation Measures MM 4.3-2 and MM 4.3-8 would be required to reduce the project’s regional and localized health effects associated with criteria air pollutants and COVID-19; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints. As such, the impacts are conservatively considered to be significant and unavoidable.

CO Hotspots

A CO “hotspot” can occur when vehicles are idling at highly congested intersections. CO hotspots can adversely affect nearby sensitive receptors. The Kern County Planning Department’s, Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports (2006) states that CO hotspots must be analyzed when one of the following conditions occur: (a) a project increases traffic at an

intersection or roadway that operates at a Level of Service (LOS) E or worse; (b) a project involves adding signalization and/or channelization to an intersection; or (c) sensitive receptors such as residences, schools, hospitals, etc., are located in the vicinity of the affected intersection or signalization. In addition, the SJVAPCD requires localized CO concentrations associated with traffic congestion be analyzed to ensure that monitored concentrations remain below CAAQS and NAAQS, and that sensitive receptors are not exposed to elevated localized concentrations near roadways that may not show up at monitoring stations. SJVAPCD, has developed a set of preliminary screening criteria that can be used to determine with fair certainty that the effect of a project has on a given intersection would not cause a potential CO hotspot. A project can be said to have not met: level of service CO violation or create a localized “hotspot” if either of the following conditions are not met: LOS on one or more streets or intersections would be reduced to LOS E or F; or the project would substantially worsen an intersection with an existing LOS F in the project vicinity.

The proposed project is not located in the vicinity of an intersection operating at level of service (LOS) E or worse. The project would have trip generation associated with construction worker vehicles and vendor trucks. As construction is only expected to last 12 to 24 months, it would be considered temporary and would not result in a long-term source of CO emissions. Also, the project would result in a minimal traffic trip increase during project operations for the 20 maintenance and security employees traveling to and from the project site. These trips would be nominal and not capable of decreasing the LOS of any intersection in the project vicinity. As identified in Section 4.15, *Transportation and Traffic*, of this EIR, the project would not result in intersections operating at or below LOS E. According to the traffic impact analysis, all intersections and roadway segments within the vicinity of the project would operate at LOS A during the existing plus project conditions. Therefore, the project would not have CO hotspot-related impacts, and would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded. Therefore, impacts would be less than significant and a CO hotspot analysis is not required.

Valley Fever

Although not a direct air pollutant, valley fever (*coccidioidomycosis*) fungal spores can cause infections to develop through inhalation of airborne fungal spores contained in windblown dust. During the proposed ground disturbing activities associated with the project, the potential exists that such activities could disturb dust particles and, if present, *Coccidioides immitis* (CI) spores, which could then be released into the air and potentially be inhaled by on-site workers and nearby sensitive receptors; exposure to these spores can cause an illness in some individuals known as Valley Fever. Because dust can be an indicator that increased efforts are needed to control other airborne particulates (including CI spores, if any), the project is required to control dust and the potential for exposure to any CI spores as well as provide training and awareness of Valley Fever via Mitigation Measures MM 4.3-6 and MM 4.3-7.

Mitigation Measure MM 4.3-2 requires the project to have comprehensive site construction controls in place to proactively control the generation of fugitive dust as required and regulated by the SJVAPCD. The proposed project would implement a Dust Control Plan prepared in accordance with SJVAPCD Regulation VIII.

Mitigation Measure MM 4.3-6 requires that training be provided to construction workers on measures they must take to proactively control and reduce fugitive dust and the potential for the release of CI spores during their ground disturbing activities, training on specific worker/task safety procedures, and general information regarding symptoms testing and treatment options for Valley Fever. All workers would be

trained in and are expected to use their “stop work” authority if their activities are deemed to be causing the release of fugitive dust. This mitigation measure also requires that an educational Valley Fever Training Handout be developed for distribution to onsite workers and nearby residents. This handout contains general information about the causes, symptoms, and treatment instructions regarding Valley Fever, including contact information of local health departments and clinics knowledgeable about Valley Fever. Mitigation Measure MM 4.3-7 would require a one-time fee of \$3,200 to be paid to the Kern County Public Health Services Department Valley Fever public awareness programs. With the implementation of the mitigation measures, dust from the construction of the proposed project would not add significantly to the existing exposure level of people to this fungus, including construction workers, and impacts would be reduced to less than significant levels.

With the implementation of Mitigation Measures MM 4.3-6 and MM 4.3-7, the potential for the release of CI spores, if present, and the associated potential for workers or nearby residents to contract Valley Fever would be minimized; accordingly, the project would not add significantly to the existing exposure level of construction workers or nearby residences to the CI fungus. Adherence to the Dust Control Plan would prevent the project from substantially increasing windblown dust concentrations compared to background level. Therefore, this impact would be less than significant.

Asbestos

Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading of development projects, and at mining operations. Constant, regular exposure to high levels of asbestos may cause cancer in humans, including lung cancer and mesothelioma, a rare cancer that attacks the lining of the lungs, stomach, and heart.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. Surveys conducted by the California Department of Conservation Division of Mines and Geology indicate the closest known bedrock formations containing ultramafic rock are in the mountainous areas of eastern Tulare County. Thus, the project site is not located in an area where naturally occurring asbestos is likely to be present (U.S. Geological Survey, 2011). Accordingly, the project would not be subject to CARBs “Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.”. In addition, to further reduce potential impacts, the project would implement a rigorous Dust Control Plan prepared in accordance with SJVAPCD Regulation VIII as detailed in MM 4.3-2. Therefore, impacts associated with exposure of construction workers and nearby sensitive receptors to asbestos would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities to the Arco Substation for the transport of renewable energy is not anticipated to expose sensitive receptors to substantial pollutant concentrations. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. PG&E's best management practices and APMs include compliance with all

applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the protection of air quality. The access road to King Rd from the project site would require minimal grading to level and gravel. Neither this or the interconnection to the Arco Substation would expose sensitive receptors to substantial pollutant concentrations.

Mitigation Measures

Implement Mitigation Measures MM 4.3-1, MM 4.3-2, and:

- MM 4.3-6:** To minimize personnel and public exposure to potential Valley Fever–containing dust on and off site, the following control measures shall be implemented during project construction:
- a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations.
 - b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground.
 - c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
 - d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying.
 - e. To the greatest extent feasible, heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system.
 - f. Workers shall receive training in procedures to minimize activities that may result in the release of airborne *Coccidioides immitis* (CI) spores, to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department within 5 days of the training session.
 - g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department.
 - h. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to onsite personal, upon request. When exposure to dust is unavoidable, provide appropriate NIOSH-approved respiratory protection to affected workers. If respiratory protection is deemed necessary, employers must develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144).

- MM 4.3-7:** Prior to the issuance of grading permits, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of \$3,200 for Valley Fever public awareness programs.
- MM 4.3-8:** At the time of project implementation, a COVID-19 Health and Safety Plan should be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy of the COVID-19 Health and Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department for review and approval.

Level of Significance after Mitigation

Toxic Air Contaminants Except Covid-19

With Implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, MM 4.3-6 through MM 4.3-8 impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Covid 19

Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-8, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM_{2.5} along with indirect linkages of criteria pollutants and COVID-19 on vulnerable populations could result in significant and unavoidable project-level impacts. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.3-3: Construction and Operation of the project would Result in Other Emissions (such as those leading to odors) Adversely Affecting a Substantial Number of People.

Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses that would be associated with objectionable odors. Odors would come predominantly from construction equipment, such as that from diesel exhaust from operation of construction equipment as well as from truck deliveries during long-term operations. However, construction emissions would cease immediately after construction is complete and deliveries would be intermittent and would not generate substantial volumes of emissions such that a substantial number of people would be affected. The project is located in a rural area and is surrounded by agricultural development with the nearest sensitive receptors being approximately 0.67 miles away.

The project also would be required to comply with California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would further reduce the detectable odors from heavy-duty equipment exhaust. Additionally, the project would follow every SJVAPCD rule and regulation to keep odors down. Lastly, given the large project area any odors would be dispersed and would not create significant objectionable odors. As discussed, construction-related

odors would be short-term and cease upon project completion. Therefore, both short term and long term odors, during construction (including decommissioning) and operation, respectively, would not impact a substantial number of people. As such, the proposed project is not expected to result in adverse emissions affecting a substantial number of people.

PG&E Arco Substation Modification and Electric Transmission Interconnection The construction and operation of the Interconnection Facilities for the transport of renewable energy would include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. and would have not result in emissions adversely affecting a substantial number of people. The implementation of the access road to King Rd from the project site would consist on minor grading to level and gravel the road. Neither the Arco substation interconnection or access road improvements would result in emissions leading to orders that would adversely affect a substantial number of people.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project and for the interconnection to the Arco substation and access roads.

Cumulative Setting, Impacts, and Mitigation Measures

The Kern County's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports (Kern County 2006) require three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized impacts (Guideline Instruction 16a); (2) evaluate consistency with existing air quality plans (Guideline Instruction 16b); and (3) summarize CARB air basin emissions (Guideline Instruction 16c).

The geographic scope for cumulative air quality impacts is a six-mile radius for regional impacts and a one-mile radius for impacts on sensitive receptors. These geographic scopes of analysis are appropriate for determining air quality impacts because of the Statewide, regional, and localized nature of air quality impacts, which could occur cumulatively with the project.

Impact 4.3-4: Construction and operation of the project would result in a cumulatively considerable net increase of any criteria pollutant for which the projects' region is nonattainment under applicable federal or State ambient air quality standards.

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past present development, and the SJVAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively

significant impact on air quality. As described previously, the project would have a less than significant impact for construction and a less than significant impact for operations.

Consistency with Existing Air Quality Plans

The project's consistency with the existing air quality plan is discussed under Impact 4.3-1 and the project was determined to be consistent because it would not exceed Kern County's or the SJVAPCD's criteria air pollutant emission thresholds.

Localized Impacts

There are a total of 66 projects within a six-mile radius of the project site. Several of the cumulative projects are renewable energy projects, for which the primary source of criteria pollutant emissions would be generated during their respective construction phases.

Short-term localized construction emissions, given that the SJVAPCD is currently designated as nonattainment for O₃, PM_{2.5}, and PM₁₀, the addition of these pollutants resulting from cumulative construction and decommissioning emissions could contribute to these existing air quality violations. Assuming on a worst-case basis that the construction schedules for all cumulative project would overlap with each other and with the proposed project, the localized effect could result in cumulatively significant construction emissions. Additionally, at a regional level, the project when considered with other reasonably foreseeable planned solar projects with the SVAPCD, could potentially result in significant cumulative construction emissions for NO_x and PM. The project would result in a contribution to significant cumulative short-term, construction-related air quality impacts.

During operation, the only likely sources of emissions for renewable facilities would be limited to vehicular emissions associated with routine employee vehicle trips for maintenance and monitoring activities, the ESS facilities, and emergency backup generators. Additionally, employee trips may also be made for the washing of solar PV panels, which may only occur seasonally throughout the year. As such, the concurrent operation of all related projects along with the project is not anticipated to exceed SJVAPCD CEQA thresholds.

Operation of the project would result in an overall net reduction of emissions by providing electricity that would displace energy produced from fossil fuels. Operation of the project does not exceed the project-level regulatory thresholds and, therefore, would not contribute to a long-term cumulative increase in criteria pollutants. The project's incremental contribution to operational impacts would not be cumulatively considerable.

California Air Resources Board (CARB) Air Basin Emissions

To evaluate the contribution of the project's construction emissions relative to the cumulative air quality conditions in Kern County and the SJVAB, the project's specific emissions are compared to the 2019 emissions of ROG, NO_x, CO, Sox, PM₁₀, and PM_{2.5}. and Kern County portion of the basin. **Table 4.3-13: Annual Cumulative Percentage of Project Construction Emissions**, shows these values and each is less than 0.001% of total emissions.

TABLE 4.3-13: ANNUAL CUMULATIVE PERCENTAGE OF PROJECT CONSTRUCTION EMISSIONS

	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	Tons per year					
Kern County	22,484	20,842	33,872	511	13,688	3,833
SJVAB	112,931	96,105	199,509	2,738	95,667	21,681
Proposed Project						
Proposed Project % of Kern County	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%
Proposed Project % of SJVAB	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%
Source: (CARB 2019a) (CARB 2019b)						

As shown in **Table 4.3-13**, the increased emissions contributed by the project in relation to the total air basin would be insignificant since air basin emissions would be essentially unchanged with or without the project.

Cumulative Impacts Summary

As discussed above, the construction emissions generated by the project individually would not exceed SJVAPCD thresholds. With regard to project level construction emissions of ROG, NO_x, CO, SO_x, PM₁₀, and PM_{2.5}, during both construction and operations are below SJVAPCD's significance thresholds. Implementation of Mitigation Measures would further reduce impacts below thresholds. As such, it was determined that the project would not obstruct SJVAPCD's ability to achieve further progress toward attainment of the state standards.

However, potential cumulative impacts to air quality could occur from construction of the proposed project in combination with regional growth projections in the same air basin. It is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. The SJVAPCD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the San Joaquin Valley Air Basin at the present time and it has not provided methodology to assess the specific correlation between mass emission generated and the effect on public health and welfare. Therefore, cumulative impacts for criteria pollutants are considered significant and unavoidable.

PG&E Arco Substation Modification and Electric Transmission Interconnection The construction and operation of the Interconnection Facilities and PG&E Arco Substation improvements for the transport of renewable energy is not anticipated to result in or contribute to a cumulatively considerable net increase of any criteria pollutant for which the projects' region is nonattainment under applicable federal or State ambient air quality standards. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation. The implementation of the access road to King Road from the project site would consist of minor grading to level and gravel the road. Neither the Arco Substation interconnection nor access road improvements would result in cumulatively considerable impacts to air quality.

Mitigation Measures

Implement Mitigation Measures MM 4.3-1 through MM 4.3-8.

Level of Significance after Mitigation

Cumulative impacts would be significant and unavoidable during temporary construction and decommissioning of the project after implementation of Mitigation Measure MM 4.3-1 through MM 4.3-8. Cumulative impacts related to operation would be less than significant.

The uncertainty of the project's regional and localized health impacts on vulnerable populations associated with criteria air pollutants, such as PM_{2.5}, along with indirect linkages of criteria pollutants and COVID-19 could result in significant and unavoidable cumulative level impacts.

Cumulative operational impacts would be less than significant. Impacts would be less than significant for the modifications and interconnection to the PG&E Arco Substation and no mitigation would be required for the interconnection with the Arco Substation.

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Section 4.4

Biological Resources

4.4.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for biological resources either present or with the potential to be present on the project site. The section includes the physical and regulatory setting for the project; an evaluation of the existing biological conditions on the project site and its vicinity; the criteria used to evaluate the significance of potential impacts on biological resources; the methods used in evaluating these potential impacts; an analysis of potential impacts; and project-specific mitigation. The analysis presented in this section is based on a review of relevant literature, field reconnaissance surveys, and focused biological surveys as well as the 2022 revised *Biological Resources Technical Report* (BRTR) for SF Azalea (Surf to Snow Environmental Resource Management, 2022), Biological Survey Results for San Joaquin Antelope Squirrel and Kangaroo Rat Burrows, H. T. Harvey & Associates, 2022), and PG&E Parcel Survey Results for San Joaquin Antelope Squirrel and Kangaroo Rat Burrows, H. T. Harvey & Associates, 2022) located in Appendix E of this EIR. In the report the areas evaluated for biological resources are identified as the Biological Study Area (BSA). **Table 4.4-1: Biological Study Area** - shows the areas surveyed with and without the 250 foot buffer.

TABLE 4.4-1: BIOLOGICAL STUDY AREA

Project Footprint Component	Estimated Acreage (no buffer)	Estimated Acreage (with 250 foot buffer)
Azalea Property	640	720
Access Road	4	127.4
Gen-Tie Line	6	
PG&E Substation and addition	20.5	22.7
TOTAL	670.5	1,069.1

The literature review included information available in peer-reviewed journals, standard reference materials, and relevant databases, including the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants, National Wetlands Inventory database, and the U.S. Fish and Wildlife Service online portal, the CDFW Special Animals List (CDFW, 2019), National Oceanic and Atmospheric Administration – National Weather Service Forecast Office, and US Army Corps of Engineers wetland delineation manuals were also reviewed to identify other special-status species and habitats with potential to occur in the project site and in the vicinity of the project site. Other sources of information reviewed include the most recent and available 2018 United States Geological Survey (USGS) 7.5-minute quadrangle topographic maps, National Resource Conservation Service (NRCS) soil survey maps, documentation and reports that were prepared for nearby renewable energy project's, and technical biological reports documenting resources in Kern County.

Surveys within the project area and BSA overall includes general biological surveys, wildlife surveys, vegetation mapping, sensitive botanical species surveys, and aquatic resources delineations. Surveys were conducted on 10 different days from September 14, 2020 through March 19, 2021. The surveys were

staggered to account for variations in blooming periods and were conducted by qualified biologists/botanists. The surveys also were used to inform whether special status plants, animals, and sensitive natural communities were on site and could be affected by the project. Protocol level surveys for special status plant species and communities were conducted as required by CDFW.

Plant community mapping was conducted using the CDFW-CNPS vegetation and rapid assessment method to determine if plant communities or alliances were present or have the potential to be present. Habitats were classified based on the presence of species, topographic position, slope, aspect, substrate conditions, hydrology, and levels of disturbance. Final classifications were based on field observations and mapped based on CDFW-CNPS protocols.

Wildlife surveys, both general and focused, were conducted for animal resources that could be supported by the site. Surveys occurred from September 14th to 18th, 2020 and from March 15th to 19th, 2021. Surveys included visual observations, video camera recordings, presence of potential habitat, and sign of presence. Existing habitats also were evaluated for their potential to support sensitive plants and wildlife as identified in the literature and database searches.

Aquatic resources were mapped in accordance with the USACE wetland delineation manual, the Interim Regional Supplement to the USACE of Engineers Wetland Delineations Manual, Arid West Region supplement, and A Guide to the Ordinary High-Water Mark (OHWM) for non-perennial streams in the Western mountains, valleys, and Coast region of the US. All wetland and water features were identified and mapped. Hydrophytic classifications of plants were determined from the current National Wetland Plant List and recorded.

4.4.2 Environmental Setting

Regional Setting

The project is located in an unincorporated area of northwest Kern County, immediately south of the boundary line between Kings County and Kern County. The project site is between California State Routes (SR) 33 and I-5, approximately 1 mile east of the location where 25th Avenue continues southeast of King Road. The town of Kettleman City is located approximately 15 miles to the north, along Highway 41. The project site is generally accessed via Interstate-5 (I-5; from its interchange with Utica Avenue), SR 3, 41, and 46. (**Figure 3-1: Regional Vicinity Map** and **Figure 3-2: Local Vicinity Map** in Section 3.0 – Project Description) show the project in relation to these areas. The general regional characteristics of land use, climate, soils, vegetation, and wildlife that directly influence the types of biological resources within the region are discussed immediately following and site specific resources are discussed further below.

Regionally, Kern County is divided into three distinct geographical regions within the Great Valley geomorphic province. The southern third of the County is largely within the Mojave Desert; the middle section straddles the Southern Sierra Nevada Range and the Transverse Ranges of the Tehachapi and San Emigdio Mountains; and the western and northern third occurs in the San Joaquin Valley (Valley Region). These are known as the Desert Region, Mountain Region, and Valley Region, respectively. The Valley Region, where the project site is located, is bound by the southern coastal range on the west, the Tehachapi mountains on the south, the Sierra Nevada Range to the east, and Kings County to the north. The project site is near the western edge of the Valley Region within approximately five miles of the foothills of the coast range. This area is

characterized by a series of gently sloping hills in the Kettleman Hills. Precipitation in this area is limited and there are no perennial streams or riparian corridors that drain to the project site.

Land Uses

Regionally the project site and area are characterized by a history of farming, ranching, and oil exploration. The proposed project site and associated infrastructure are located in areas classified in the most recent update to the California Department of Conservation's (CDC) Important Farmland Map as "Grazing Land." Other areas with grazing land designations and designations of farmland are the dominant uses to the east. To the west the agricultural uses diminish as the elevation rises and gives way to the foothills of the coast range. Development within this portion of the Valley Region is sparse, with isolated rural residential areas and pockets of areas with infrastructure such as pumps, tanks, pipelines and canals needed to facilitate the agricultural and ranching uses. Based on aerial photos, much of the BSA and area used for grazing has been routinely disced and irrigated since at least 2010.

Climate

The climate of the southern San Joaquin Valley is typically arid. In general, winters are mild, with temperatures averaging 45° F in January, and rarely falling below 28° F. Winter months are also characterized by dense ground or "tule" fog. Summer temperatures average 84° F in July and often exceed 100° F during summer months (Chang 1988). It is historically known that the region experiences rapid shifts in rainfall patterns, with both severe droughts and high rainfall years. Precipitation generally occurs within the winter and spring with very little occurring during the summer. Winds are generally mild to moderate from 0 to 10 miles per hour (mph) with gusts upwards of 40 mph on rare occasions. The project sites elevation ranges from approximately 462 to 584 feet above mean sea level (amsl). See **Figure 3-2: Local Vicinity**.

Soils

There are a total of 14 soil series types within the project site and along the proposed gen-tie routes. Soils include Cantua course sandy loam, Delgado sandy loam (three classes), Bitterwater sandy loam, Granoso sandy loam, Catollo-Twisselman saline alkali association, Kecksroad silty clay loam, Kimberlina fine sandy loam, Kimlberina sandy loam, Panoche clay loam, Twisseman clay (two classes). The location and characterization of these soils is provided in detail in Appendix E, and in additional detail Chapter 4.7 – *Geology and Soils*.

Vegetation

Vegetation in the San Joaquin Valley region is influenced by arid climatic conditions, topography, and past land uses discussed above. Native vegetation in the region has largely been replaced by the existing variety of agricultural uses. Portions of the San Joaquin Valley still supports marshes, vernal pools, riparian woodlands, alkali sink vegetation, stands of valley oak as well as some desert elements in the southern San Joaquin Valley. These native elements, however, are absent from the project site.

Wildlife

The San Joaquin Valley supports a variety of reptiles, birds, and mammals. Reptile species commonly

occurring in the San Joaquin Valley portion of Kern County include the side-blotched lizard (*Uta stansburiana*), western whiptail (*Aspidoscelis tigris munda*), and gopher snake (*Pituophis melanoleucus*). Bird species common to the region include common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorrhous mexicanus*), and red-tailed hawk (*Buteo jamaicensis*). Mammal species typical of the area include California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), and bat species including Yuma myotis (*Myotis yumanensis*).

Special-Status Species

Special-status species are defined as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or local agencies as being under threat from development pressures as well as natural causes. Some of these species receive specific protection that is defined by the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). Other species have been designated as special-status on the basis of adopted policies and expertise of state resource agencies, organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities and/or special districts to meet local conservation objectives. Special-status species include the following:

- Species listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under FESA or the CESA;
- Species that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) *Guidelines* Section 15380;
- All of the plants constituting California Rare Plant Rank (CRPR) 1B and CRPR 2B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act [NPPA]) or Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CFGF), and are eligible for state listing. Many CRPR 4 species do not meet the definitions of special-status plants but may be significant locally and are recommended for consideration under CEQA (CNPS, 2001);
- Wildlife designated by the CDFW as “species of special concern” or “special animals”;
- Wildlife “fully protected” in California (CFGF Sections 3511, 4700, and 5050);
- Wildlife species protected as “fur-bearing mammals” (CFGF Section 4000 et seq.);
- Species and open lands that are identified in the Kern County General Plan (Kern County, 2009) ;
- Avian species protected by the Migratory Bird Treaty Act (MBTA) and CFGF (Sections 3500–3516).

Survey Protocols

Protocols for surveying and evaluating special-status plant species and communities were conducted. Botanical field surveys provided information used to determine the potential environmental effects of the proposed project on special-status plants and sensitive natural communities as required by CEQA, CESA, and federal ESA (CDFW 2018). All vascular plant species occurring within the project site and overall study area that were in identifiable condition at the time of the surveys, regardless of regulatory status, were identified to species or infraspecific taxon using keys and descriptions in the Jepson Flora Project (2020). Scientific nomenclature and common names for plant species in this report follow the Jepson Flora Project (2020) and CNPS (2020).

Botanical surveys for Summer-blooming plant species were conducted during the day from September 14 to 17, 2020. Reference populations for rare plants were visited prior to the September 2020 and March 2021 botanical field surveys that were conducted within the Property and associated lands.

Botanical surveys for Spring-blooming plants were conducted during the day from March 14 to 18, 2021. The timing of the March 2021 botanical surveys was planned to occur within the blooming period of the eight spring-blooming special-status plant species that were evaluated.

Based on the existing habitats, vegetation, communities, and other environmental factors a determination as to the species potential to occur was made. The potential for occurrence ranges from high potential, moderate potential, low potential, or no potential to occur within the BSA. The plant species and their potential to occur are reflected in **Table 4.4-2: Special Status Species of Concern with Potential to Occur in the Project site**, list further below.

- **High Potential:** Species or subspecies was observed or detected within the BSA during surveys or has been documented within a 2-mile radius of the BSA within the last 15 years and suitable breeding and/or foraging habitat is present.
- **Moderate Potential:** The species has been documented by CNDDDB or other sources as occurring within 5 miles of the BSA within the last 25 years and suitable habitat for the species is present.
- **Low Potential:** The species has historically occurred on or within 5 miles of the BSA or further away, but no occurrences have been documented within the last 25 years and/or marginal habitat is present for the species.
- **No Potential:** The species would not occur within the BSA due to lack of suitable habitat conditions, and/or the lack of known occurrences within the last 35 years and/or agency protocol-level surveys were conducted; the species was not found.

Local Setting

The project site and surrounding land are relatively flat and exhibit little topographic relief except for gently rolling slopes. The site lacks significant channelization or perennial water sources. Plant communities within the project site and immediately surrounding area are heavily influenced by disturbances from anthropogenic sources, specifically agricultural uses. In addition, soil types, topography, past agricultural and grazing activities, and minimal precipitation contribute to lack of diversity in vegetative composition. Soils in the project site and surrounding locations are generally well drained and contain several gypsum outcrops where vegetation is scarce. There are no trees or woody shrubs within the project site. Adjacent to the project site to the south and east are active orchards beyond the existing fence line.

The project site has been disced and irrigated routinely since at least 2010 but still is used for grazing. There are no buildings on the site. Habitats within the project site include the agricultural field, non-native annual grassland habitat, and patches of ruderal habitat along the fenced boundaries of the site. To facilitate watering of the row crops needed for grazing, sprinklers have been installed in a grid pattern and water is sourced from a detention basin on the eastern portion of the project site. A cattle yard and fence are present at the southern part of the property and cattle are released either to the east or west through the cattle yard.

The Access Road (See **Figure 4.4-1: Biological Study Area**) was added to the BSA prior to the March 2021 surveys. The Access Road crosses the California Annual Grassland (CAG) north of the Project Footprint (See **Figure 4.4-1**) and is potential habitat for both Summer, Fall, and Spring-blooming special-status plants with potential to occur in the BSA. The September 2020 and March 2021 botanical surveys were conducted within the evident and identifiable period for all plants with the potential to occur.

Special-Status Plants

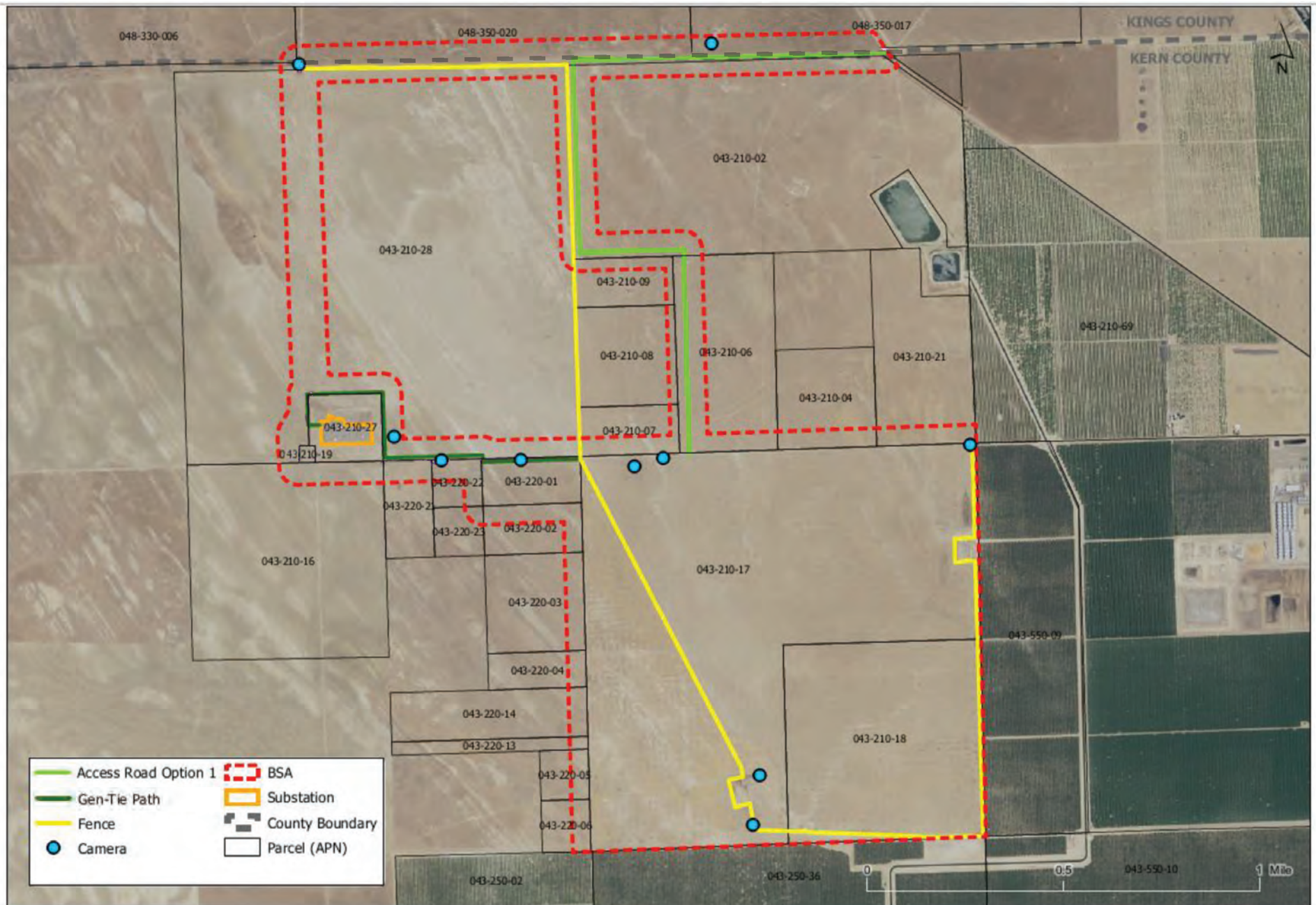
No special-status plant species were observed within the BSA during the September 2020 through March 2021 surveys. Surveys were floristic in nature and all vascular species present, and in adequate condition, were identified to species or intraspecific taxon. Prior database searches revealed that eleven special-status plant species have been documented within the nine-quad area surrounding the USGS 7.5' Avenal Gap quadrangle based on CNDDDB, CNPS and CCH records. The site was evaluated for the potential presence of all eleven special-status plant species. Reference populations were studied prior to fieldwork and covered several sites adjacent the aqueduct north of the BSA, alkaline flats of the Cholame valley west of the BSA, near the Caririzo Plain south of the BSA, the Lost Hills southeast of the BSA and the Kern National Wildlife Refuge to the east of the BSA.

Eleven special-status plant species have been documented within the nine-quad area surrounding the USGS 7.5' Avenal Gap quadrangle. CNDDDB records document three of these special-status plant species and Valley Saltbush Scrub habitat as occurring within a 5-mile radius surrounding the BSA, as shown in **Figure 4.4-2: Special Status Plant Species**. A summary of the 11 special status plants and their potential to occur are shown in **Table 4.4-2**. Three species have no potential to occur due to a lack of suitable habitat and five species have a low potential to occur in the BSA. Three plant species including the California Jewelflower (*Caulanthus californicus*), San Joaquin bluecurls (*Trichostema ovatum*), and San Joaquin Wollythreads (*Monolopia congdonii*) have a moderate Status potential to occur. These species are discussed in additional detail and shown in **Table 4.4-2**, described in detail after the plant and wildlife species discussions immediately following.

California Jewelflower (*Caulanthus californicus*) - CRPR 1B.1; Federal and State Endangered. This species is an annual herb with a blooming period that extends from February to May. It occurs on flats and slopes; generally, in non-alkaline grasslands from 230 to 3281 feet above mean sea level (amsl). It is supported by sandy soils in chenopod scrub, piñon and juniper woodland, and valley and foothill grasslands but is rare in Kern County. Within Kern County most records are extirpated or presumed extirpated. The species is presumed to be extirpated from King and Tulare County.

There are two documented CNDDDB occurrences of California Jewelflower within the nine-quad area surrounding the BSA but both are extirpated or assumed extirpated. Accordingly, the species is rare, only grows in wet years on the alkali plains typically north of Semitropic and the upper Sonoran grasslands of the Greenhorn foothills but new populations having been found in southern Kern County on the Tejon Ranch quad.

San Joaquin Bluecurls (*Trichostema ovatum*) - CRPR 4.2. This species is an annual herb with a blooming period that extends from July to October and has a moderate potential to occur within the BSA. It occurs on disturbed sites in grasslands below 984 feet, in chenopod scrub, and in valley and foothill grasslands from 213 to 1,050 feet, but some transient colonies can do well during years with late spring rains. The species is known to occur in Kern, Fresno, Kings, San Luis Obispo and Tulare Counties.

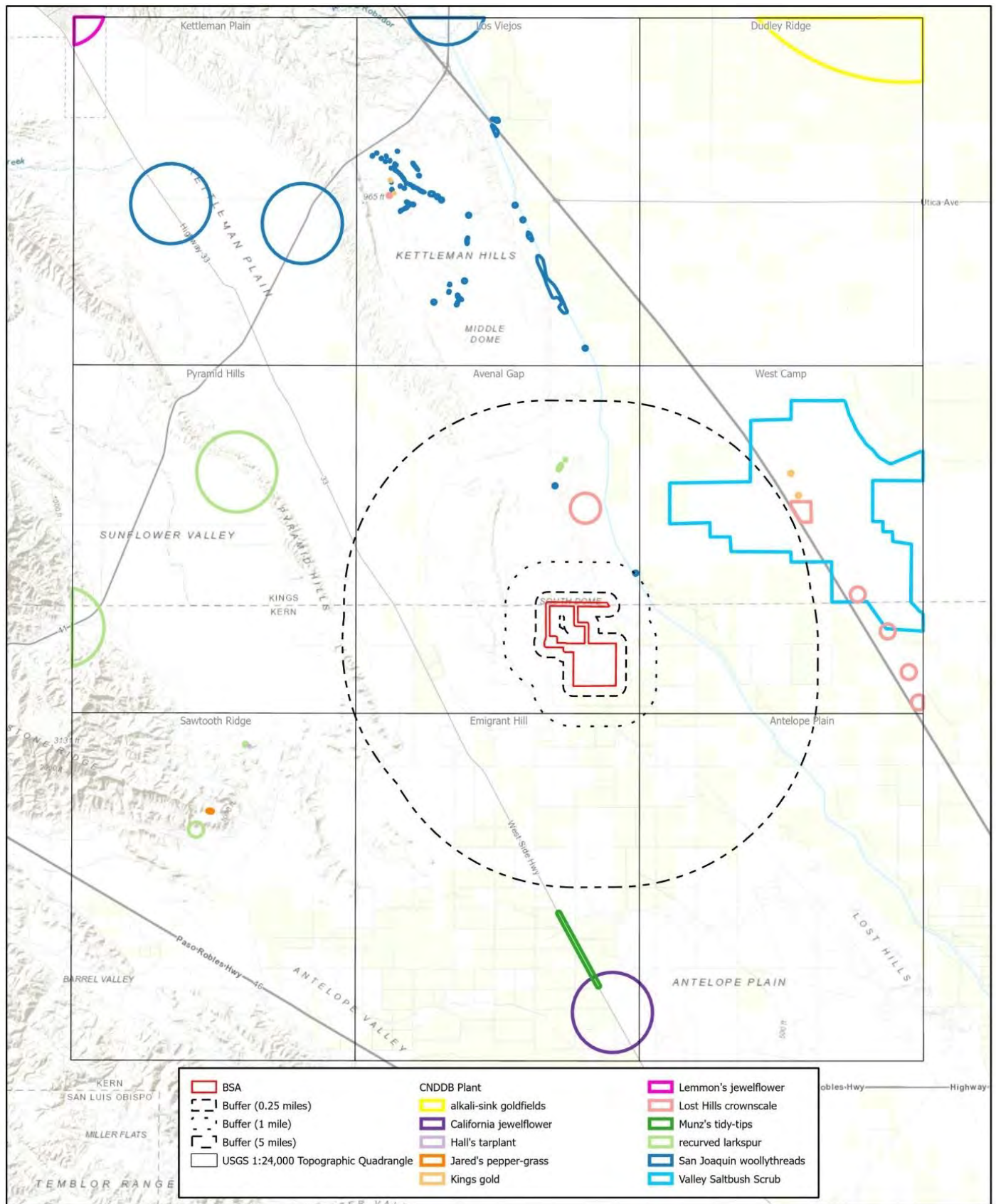


Source: Surf to Snow, 2022

FIGURE 4.4-1: Biological Study Area
 Draft Environmental Impact Report
 Azalea Solar Project



Not to scale



Source: Surf to Snow, 2022

FIGURE 4.4-2: Special Status Plant Species

Draft Environmental Impact Report
Azalea Solar Project



Not to scale

TABLE 4.4-2: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Listing Status (Federal, State, CRPR)	Habitat Requirements	Potential to Occur and Explanation
Plants				
<i>Allium howellii</i> <i>var. howellii</i>	Howell's onion	CRPR 4.3	Perennial bulbiferous herb. Common plant on grassy slopes including serpentine from 656 to 2,953 ft. (Jepson 2020). Occurs on clay or serpentinite in valley and foothill grasslands from 164 to 7218 ft. (CNPS 2020).	Low Potential. Suitable clay substrate occurs in survey area. Only one historic record (1947) occurs within a 40-mile radius around the survey area. Species not observed at time of field survey.
<i>Amsinckia furcata</i>	Forked fiddleneck	CRPR 4.2	Annual herb. Occurs on semi-barren, loose, shaly slopes from 164-3281 ft. (Jepson 2020). Occurs in cismontane woodland and valley and foothill grasslands from 164 to 3,281 ft. (CNPS 2020).	No Potential. Suitable substrate does not occur in survey area.
<i>Atriplex coronata</i> <i>var. coronata</i>	Crownscale	CRPR 4.2	Annual herb. Occurs on fine alkaline soils below 656 ft (Jepson 2020). Often occurs on alkaline clay in chenopod scrub, valley and foothill grasslands, and vernal pools from 3 to 1,935 ft. (CNPS 2020).	Low Potential. Alkaline soils occur along the western perimeter of the BSA. Chenopod scrub community was not observed within the BSA.
<i>Atriplex coronata</i> <i>var. vallicola</i>	Lost Hills crownscale	CRPR 1B.2	Annual herb. Occurs on dried ponds with alkaline soils below 1,410 ft. (Jepson 2020). Often occurs on alkaline clay in chenopod scrub, valley and foothill grasslands, and vernal pools from 164 to 2,083 ft. (CNPS 2020).	Low Potential. Alkaline soils occur along the western perimeter of the BSA. Chenopod scrub community was not observed within the BSA.
<i>Caulanthus californicus</i>	California jewelflower	CRPR 1B.1	Annual herb. Occurs on flats and slopes; generally, in non-alkaline grasslands from 230 to 3,281 ft. (Jepson 2020). Occurs on sandy soils in chenopod scrub, pinyon and juniper woodland, and valley and foothill grasslands from 200 to 3,281 ft. (CNPS 2020).	Moderate Potential. Suitable habitat (sandy soils and non-alkaline grassland) occurs in the survey area. Not observed at time of field survey.

TABLE 4.4-2: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Listing Status (Federal, State, CRPR)	Habitat Requirements	Potential to Occur and Explanation
<i>Delphinium recurvatum</i>	Recurved larkspur	CRPR 1B.2	Perennial herb. Occurs in poorly drained, fine, alkaline soils; Atriplex scrub from 98-1969 ft. (Jepson 2020). Occurs on alkaline soil in chenopod scrub, cismontane woodland, and valley and foothill grasslands from 197 to 1,969 ft. (CNPS 2020).	Low Potential. Alkaline soils occur along the western perimeter of the BSA; however, soils are well drained and lacked vegetation. Chenopod scrub community was not observed within the BSA.
<i>Eriastrum hooveri</i>	Hoover's Eriastrum	CRPR 4.2	Annual herb. Occurs on alkaline flats, above dry streambeds, below 2,953 ft (Jepson 2020). Sometimes occurs on gravelly areas in chenopod scrub, pinyon and juniper woodland, and valley and foothill grasslands from 164 to 3,002 ft. (CNPS 2020).	No Potential. No suitable habitat occurs in survey area.
<i>Lepidium jaredii</i> ssp. <i>jaredii</i>	Jared's pepper-grass	CRPR 1B.2	Annual herb. Occurs on alkali bottoms, slopes, washes, dry hillsides, vertic clay, and acidic and gypsiferous soils from 1,641 to 2,297 ft. (Jepson 2020). Occurs on alkaline and adobe soils of valley and foothill grasslands from 1,099 to 3,297 ft. (CNPS 2020). Known only from near Soda Lake on the Carrizo Plain (SLO Co.) and Devil's Den (KRN Co.).	No Potential. No suitable habitat occurs in survey area.
<i>Monolopia congdonii</i>	San Joaquin woollythreads	FE, CRPR 1B.2	Annual herb. Occurs on sandy soil in grasslands from 295 to 2,297 ft. (Jepson 2020). Occurs on sandy soils in valley and foothill grasslands, and chenopod scrub from 197 to 2,625 ft. (CNPS 2020).	Moderate Potential. Suitable habitat (sandy soils and non-alkaline grassland) occurs in the survey area. Not observed at time of field survey.
<i>Trichostema ovatum</i>	San Joaquin bluecurls	CRPR 4.2	Annual herb. Occurs on disturbed sites in grasslands below 984 ft. (Jepson 2020). Occurs in chenopod scrub and valley and foothill grasslands from 213 to 1,050 ft. (CNPS 2020).	Moderate Potential. Suitable habitat (sandy soils and non-alkaline grassland) occurs in the survey area. Not observed at time of field survey.

TABLE 4.4-2: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Listing Status (Federal, State, CRPR)	Habitat Requirements	Potential to Occur and Explanation
<i>Tropidocarpum californicum</i>	King's gold	CRPR 1B.1	Annual herb. Occurs on alkaline, sandy clay soil in Atriplex scrub at approximately 213 ft. (Jepson 2020). Occurs in chenopod scrub from 213 to 591 ft. (CNPS 2020).	Low Potential. Alkaline soils occur along the western perimeter of the BSA. Chenopod scrub community was not observed within the BSA.
Reptiles				
<i>Gambelia sila</i>	Blunt-nosed Leopard Lizard	FE, CE; CFDW Fully Protected	Blunt-nosed leopard lizard historically occurred at elevations of 100 to 2,400 feet throughout the San Joaquin Valley, surrounding foothills, and valleys to the west, from San Joaquin County south to the Tehachapi Mountains.	High Potential. Suitable habitat is present within the survey area. Occurrence documented within the last 15 years within the BSA.
<i>Masticophis flagellum ruddocki</i>	San Joaquin Coachwhip	SSC	San Joaquin Coachwhip, is endemic to California, ranging from Arbuckle in the Sacramento Valley in Colusa County southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges. An isolated population occurs in the Sutter Buttes. Apparently intergrades with <i>C. f. piceus</i> in eastern Kern County. A San Joaquin coachwhip was observed during the June 2022 survey of the access road. That observation is included in the 2022 focused access road survey report located in Appendix E..	Moderate Potential. Occurrences documented 9-19 miles from the BSA. One occurrence during the June 2022 survey. Marginal habitat present
Birds				
<i>Falco mexicanus</i>	Prairie Falcon	WL, BCC	Prairie falcon is an uncommon permanent resident ranging from southeastern deserts northwest throughout the Central Valley and along the inner Coast Ranges and Sierra Nevada	Moderate Potential. Suitable foraging habitat. Species is documented within 5 miles of the BSA within the last two years. Suitable foraging habitat is present but no breeding habitat is present.

TABLE 4.4-2: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Listing Status (Federal, State, CRPR)	Habitat Requirements	Potential to Occur and Explanation
<i>Buteo swainsoni</i>	Swainson's Hawk	CT	Swainson's hawk is found in multiple populations in California, with the larger part of the species' distribution in the northeastern part of the state, and populations in the Sacramento and San Joaquin Valleys, occasionally extending south to Antelope Valley and Joshua Tree National Monument.	Moderate Potential. Suitable foraging habitat. Species is documented within 5 miles of the BSA within the last two years. Suitable foraging habitat is present but no breeding habitat is present.
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl	SSC	In California, western burrowing owl is considered a year-round resident breeding locally. Species prefers expanses of level, well-drained open habitat with sparse ground cover and few shrubs. Generally, inhabits burrows of fossorial mammals, primarily California ground squirrels.	High Potential. Suitable breeding and foraging habitat are present. The species was documented within 1.9 miles of the project site.
<i>Eremophila alpestris actia</i>	California horned lark	WL	California horned lark is found from grasslands along the coast and deserts extending from near sea level to alpine dwarf-shrub habitat above tree-line and in coniferous or chaparral habitats.	High Potential. Suitable foraging and nesting habitat is present.
<i>Agelaius tricolor</i>	Tri-colored Blackbird	CT, BCC	Tricolored blackbird occurs east from the Central Valley to San Francisco Bay and south to northern Santa Barbara County at elevations from sea level to approximately 4,000 feet. Disjunct populations are also present along the south coast from southern Ventura County down to Baja California, with disjunct populations northward to Washington.	No Potential. No suitable habitat is present within the BSA.
<i>Lanius ludovicianus</i>	Loggerhead shrike	SSC	Loggerhead shrike inhabits open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. The species frequents agricultural fields and pastures, where it preys on insects.	High Potential. Suitable foraging and nesting habitat is present.

TABLE 4.4-2: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Listing Status (Federal, State, CRPR)	Habitat Requirements	Potential to Occur and Explanation
Mammals				
<i>Taxidea taxus</i>	American Badger	SCC	American badger is found in dry, open habitats including grassland and open woodland. Suitable burrowing habitat requires dry, sandy soil. Although badger is widely distributed across California, the species may be comparatively uncommon or absent from areas where it occurred historically.	High Potential. Foraging and denning. Species observed with remote camera and documented within 6.5 miles of the BSA in the last 22 years. Suitable habitat is present.
<i>Dipodomys ingens</i>	Giant Kangaroo Rat	CE, FE	Historically, giant kangaroo rat occurred at elevations from approximately 300 to 3,000 feet in the western San Joaquin Valley and bordering hills and valleys. Due primarily to extensive agricultural conversion, its populations have become fragmented. The Kettleman Hills area support one population.	High Potential. Foraging and breeding. Species documents within 4.1 miles of the BSA within the last 33 years. Suitable foraging and burrowing habitat are present. Unidentified kangaroo rat observed with remote camera.
<i>Ammospermophilus nelsoni</i>	Nelson's Antelope Squirrel	CT	This species inhabits the arid grassland, shrubland, and alkali sink habitats of the San Joaquin Valley and adjacent foothills. Present populations can be found at elevations 165 feet on the San Joaquin Valley floor to around 3,609 feet in the Temblor Mountains.	Moderate Potential. Foraging and Breeding. Two occurrences documented in 2006 within 3 miles of the BSA. Suitable foraging and burrowing habitat are present.
<i>Vulpes macrotis mutica</i>	San Joaquin Kit Fox	CE, FE	San Joaquin kit fox occurs, or historically occurred, throughout most of the San Joaquin Valley. Several occurrences within a 5- mile radius of the BSA have been recorded in the CNDDDB. One of the occurrences is 1 mile north of the Property.	High Potential. Foraging and Denning. Five occurrences documented within 5 miles. One occurrence. Foraging and Denning.

TABLE 4.4-2: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Listing Status (Federal, State, CRPR)	Habitat Requirements	Potential to Occur and Explanation
<i>Dipodomys nitratoide brevinasus</i>	Short-nosed Kangaroo Rat	SSC	Short-nosed kangaroo rat is endemic to the state of California and occurs, or historically occurred, on the western, southern, and extreme southeastern sides of the San Joaquin Valley, from Livingston in Merced County south to Kern County, although there are few records from north of Fresno County. It is also known from Panoche Valley, the Carrizo Plain, and the Cuyama Valley.	Low Potential. Four occurrences documented in 2002 over 5 miles from the BSA. Unidentified kangaroo rat observed with remote camera.
<i>Dipodomys nitratoide</i>	Tipton Kangaroo Rat	FE, CE	Tipton kangaroo rat is endemic to the state of California and occurs, or historically occurred, primarily on the San Joaquin Valley floor in the Tulare Basin in Kings, Tulare, and Kern counties. There are also (CNDDDB) records from the Carrizo Plain.	Low Potential. Two occurrences documented in 2006 over 5 miles from the BSA. Unidentified kangaroo rat observed with remote camera.
<i>Onychomys torridus tularensis</i>	Tulare Grasshopper Mouse	SSC	Tulare grasshopper mouse occurs in the southern San Joaquin Valley, from western Merced and eastern San Benito Counties, east to Madera County and south to Kern and east San Luis Obispo counties, including Panoche Valley, the Carrizo Plain, the foothills of the Tehachapi and San Emigdio Mountains, and the upper Cuyama Valley. It also occurs in the southernmost Sierra Nevada and Tehachapi Mountains.	Low Potential. One occurrence documented in 2006 over 5 miles from the BSA
Amphibians				
<i>Spea hammondi</i>	Western Spadefoot Toad	SSC	Western spadefoot toad occurs in California from Redding south through the Central Valley and bordering hills, in portions of the Coast Ranges (away from the coast in the north) from the Monterey Bay area to Santa Barbara County, and in coastal southern California (inland to western Riverside and southwestern San Bernardino counties) south to northwest Baja California.	No Potential. One occurrence documented in 2019 within 4.8 miles from the BSA. No suitable habitat within the BSA.

TABLE 4.4-2: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Listing Status (Federal, State, CRPR)	Habitat Requirements	Potential to Occur and Explanation
Explanation of state, federal and listing codes:				
Federal listing codes:				
-FE: Federally Endangered Species				
-FT: Federally Threatened Species				
-BCC: U. S. Fish & Wildlife Service Birds of Conservation Concern				
Other listing codes:				
-M: Western Bat Work Group-Medium priority				
-LC: World Conservation Union- Least Concern				
-VU: World Conservation Union- Vulnerable				
-NT: World Conservation Union- Near Threatened				
-IM: Xericus Society: Imperiled				
-WLBBC: American Bird Conservancy - U. S. Watch List of Birds of Conservation Concern				
		California listing codes:		US Forest Service Codes:
		-CT: State-listed as Threatened		USFSS: Forest Service Sensitive
		-CE: State-listed as Endangered		Bureau of Land Management Codes:
		-SSC: California Species of Special Concern		BLMS: BLM Sensitive
		-WL: On California Watch List		
		-CDFS: California Department of Forestry and Fire Prevention: Sensitive		
		-FP: Fully protected species		
		-G1S1 -CNDDDB Ranking system		
		-G2 – Global Rank Imperiled		
		-S2 – State Rank Imperiled		
		For detailed breakdown of codes refer to:		
		http://www.natureserve.org/publications/ConsStatusAssess_StatusFactors.pdf		

There are no CNDDDB records of San Joaquin bluecurls within the nine-quad area surrounding the BSA, but there may be gaps in records because it is a CNPS CRPR 4.2 plant. The 2020 CNPS does show several collections of the species in the Avenal Gap approximately 5.5 miles to the northwest. The next nearest record is approximately 8 miles north of the BSA which was in a grasslands adjacent to the aqueduct. This population was still present until at least late 2020.

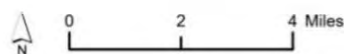
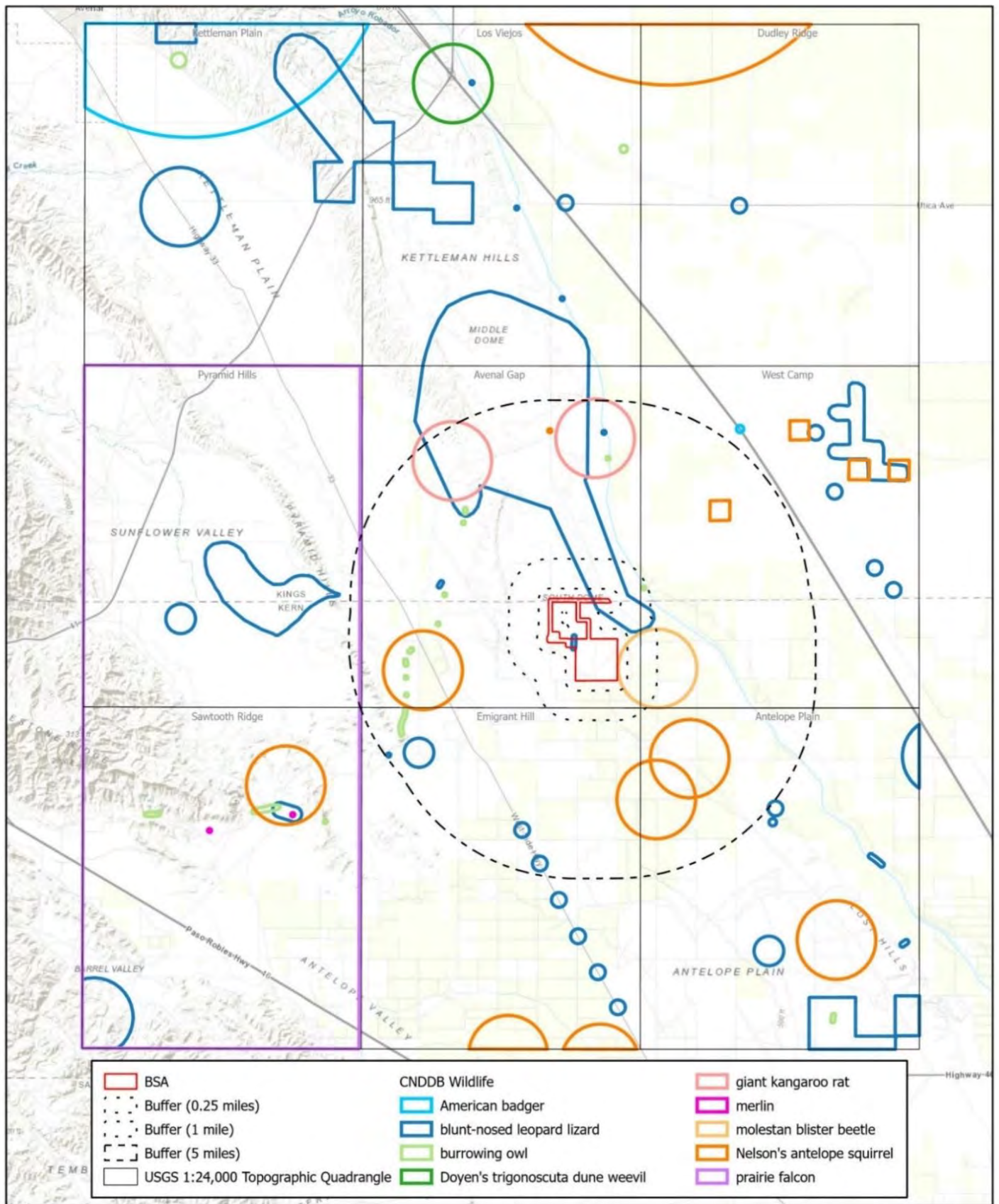
San Joaquin Woollythreads (*Monolopia congdonii*) – CRPR 1B.2, Federal Endangered. This species is an annual herb with a blooming period that extends from January to May and has a moderate potential to occur within the BSA. It occurs on sandy soil in grasslands from 295 to 2297 feet. It occurs in valley and foothill grasslands, and chenopod scrub from 197 to 2625 feet amsl. Suitable substrate occurs in the survey area and consists of sandy soils and grassland. This species is scarce in the valley with the plant usually growing on wind-modified light soil or sand dunes and in years with more than normal rainfall. The species occurs in Kern, Fresno, Santa Barbara, San Benito and San Luis Obispo Counties. There are 15 CNDDDB extant records of San Joaquin woollythreads within the nine-quad area surrounding the BSA. The closest record is located approximately 2.8 miles north in gently rolling hills in fine sandy soils.

Special-Status Wildlife

A total of 15 sensitive wildlife species have been documented in CNDDDB records within a 5-mile radius of the project site. Six species have a low or no potential to occur. Six of the sensitive wildlife species have a moderate to high potential to occur as shown in **Figure 4.4-3: Special Status Wildlife Species A** and **Figure 4.4-4: Special Status Wildlife Species B** and **Table 4.4-2**. Three additional sensitive species that are on state and/or federal watchlists were observed during surveys. The nine sensitive species with potential to occur are discussed below.

Blunt-nosed Leopard Lizard (BNLL; *Gambelia sila*) - Federal and State Endangered. This species is documents in the CNDDDB with 35 occurrences within the nine-quad search area. Four of these occurrences are within 5 miles of the BSA and 30 occurrences are more than 5 miles from the BSA between 2006-2019. There was a single occurrence within the BSA in 2006. One occurrence is believed to be extirpated while all remaining occurrences are believed to be extant. BNLL has been documented along the project's Gentle line alignment as well as less than 1 mile north of the property that includes a sighting in 2016. BNLL is a fully protected species with a high potential to occur and is presumed present within the BSA. Historically, this species occurred at elevations ranging from 100 to 2,400 feet amsl throughout the San Joaquin Valley, surrounding foothills, and valleys to the west. This species is active from early April to early November but dormant during the winter. BNLL utilizes small mammal burrows, especially abandoned California ground squirrel tunnels or occupied or abandoned kangaroo rat tunnels for refuge, sheltering during periods of inactivity, and for laying eggs. The species primarily eats insects but will consume other lizards and occasional plant matter. Breeding season is between late April and July and clutches of one to six eggs laid in June or July are typical.

Swainson's Hawk (*Buteo swainsoni*) - California State Threatened.- Swainson's hawk is found in multiple populations in California, with the larger part of the species' distribution being in the northeastern part of the state including the Sacramento and San Joaquin Valleys. This species is documented in the CNDDDB with three occurrences within a 5-mile radius and a single occurrence located 4.1 miles west of the BSA in 2019. There is no nesting habitat is present within the BSA but there is foraging habitat. The species has a moderate potential to use the site.

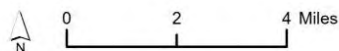
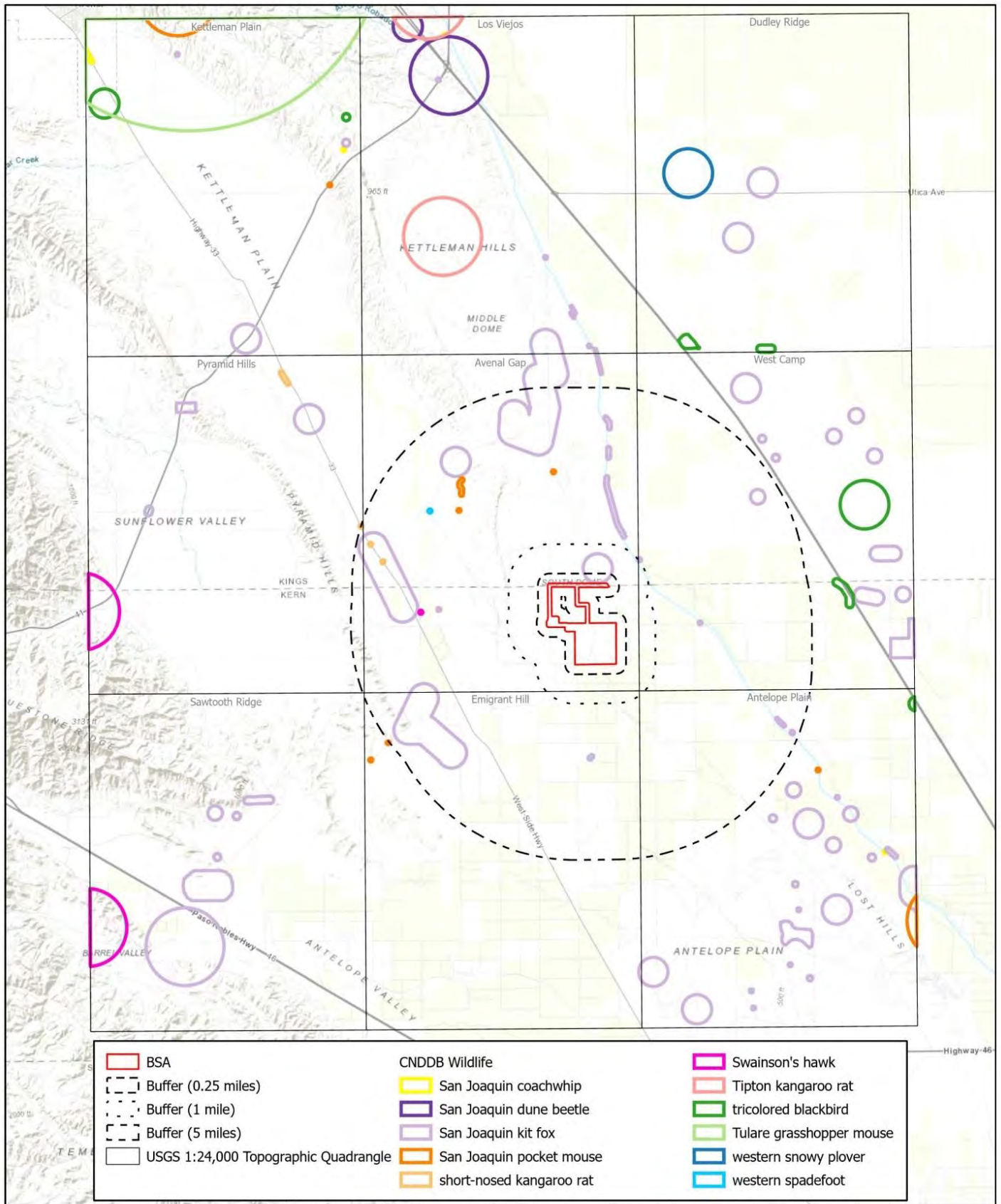


Source: Surf to Snow, 2022

FIGURE 4.4-3: Special Status Wildlife Species A
 Draft Environmental Impact Report
 Azalea Solar Project



Not to scale



Source: Surf to Snow, 2022

FIGURE 4.4-4: Special Status Wildlife Species B

Draft Environmental Impact Report
Azalea Solar Project



Not to scale

Swainson's hawk prefers foraging in open grassland or agricultural habitat and will use scattered trees or trees within riparian corridors for nesting. Prey includes other birds, invertebrates, and rodents and the species will modify foraging behavior in response to agricultural activity such as mowing and discing. The project site is currently being disked and the existing condition of the project site with limited vegetation cover makes for low quality foraging habitat. Breeding season typically begins in early March and continues until late August through mid-September. Nests are composed of sticks, often in trees and riparian corridors, and typically 5 to 30 feet high. Clutches typically consist of two eggs and are incubated by both parents for approximately 28 days. The young fledge when they are 28 to 35 days old.

San Joaquin Kit Fox (SJKF; *Vulpes macrotis mutica*) - Federal and State Endangered. This species is documented in the CNDDDB records 1 mile north of the project site and at multiple locations along the 25th Avenue/King Road corridor. Sightings were documented in 2004, 2007 and 2017, most of which were in 2007. There were several sightings within 5 miles west of the site. Within the BSA, however, there were no burrows with signs indicating occupation by SJKF, but due to the number of previous records in the vicinity, SJKF has a high potential to occur within the BSA.

SJKF historically occurred throughout most of the San Joaquin Valley, but numbers have declined. The species inhabits grassland habitats where friable soils are present. The general habitat requirement for SJKF is annual grasslands or grassy open habitat with scattered shrubby vegetation. This species is active year-round and is primarily nocturnal, requiring dens for temperature regulation, shelter from adverse weather, protection from predators, and for pupping. SJKF's diet typically consists of rodents such as white-footed mice (*Peromyscus leucopus*), California ground squirrels, black-tailed jackrabbit, other small mammals including desert cottontails (*Sylvilagus audubonii*), as well as insects and insects; but the species is known to opportunistically forage on garbage in urbanized areas.

The species also will use habitats that have been altered by humans, such as oil fields, grazed pasturelands and "wind farms". This species does prefer gentle slopes of less than 10 degrees, and the requirement for gentle slopes for reproductive dens may limit population viability in slopes with greater topographic relief. However, topographic ruggedness has been determined to be an important habitat factor affecting SJKF distribution. The SJKF generally constructs its own burrow but can also enlarge or modify existing burrows.

SJKF mates once per year from mid-December to February, or March, with a typical gestation period of 49 to 55 days. The species produces a litter of one to seven, with an average of four, occurring from February to late March (perhaps into April). SJKF fox young stay in their birth den until they are four weeks old and are weaned at eight weeks when they begin to hunt before dispersing by eight months.

Giant Kangaroo Rat (*Dipodomys ingens*) - Federal and State Endangered. CNDDDB records show the giant kangaroo rat within 5 miles of the BSA, with occurrences concentrated to the north of the BSA. An unidentified kangaroo rat was detected in the southernmost part of the BSA with a remote camera during surveys. The species is endemic to California and is the largest kangaroo rat species and historically occurs at elevations from about 300 to 3,000 feet amsl. The species occurs in the western San Joaquin Valley and bordering hills and valleys to the west from southwestern Merced County, south through southeastern San Benito County, western Fresno and Kings counties, eastern San Luis Obispo County, northeastern Santa Barbara County, and western Kern County to the northern base of the Tehachapi Mountains. Its range in the region includes the southwestern edge of the San Joaquin Valley, including the Carrizo Plain, Elkhorn Plains, Kettleman Hills, and Cuyama Valley. Due primarily to extensive agricultural conversion within its historic range, its populations have become fragmented. The Kettleman Hills area of southwestern Kings County, north and northwest of the BSA, supports one population.

Optimal habitat for the species is annual grassland with few or no shrubs, sandy loam soils, and gentle slopes free from periodic flooding. Steeper slopes in open scrub types, including saltbush scrub; upper Sonoran subshrub scrub; and other scrub habitat, are believed to be suboptimal habitat. The primary diet consists of seeds, including seeds of filaree, peppergrass (*Lepidium spp.*), and brome grasses but also consumes green vegetation and insects.

Typical breeding seasons is in late winter or early spring, but may occur between December and April or May. Low population density areas may extend into August or September. Young are born in a burrow in the spring (1 to 6 young with 3 on average). The young are cared for by both parents and are weaned in 15 to 25 days. The young then leave the burrow and seek new territories within the colony to dig their own burrows. Giant kangaroo rat has been known to live up to 9.8 years in the wild.

Nelson's Antelope Squirrel (*Ammospermophilus nelsoni*) - California State Threatened. The CNDDDB records for this species indicate that Nelson's antelope squirrel (or San Joaquin antelope squirrel) has been sighted, in 1988, within 2 miles southwest of the BSA and within 3 miles west of the BSA. The species is a small ground dwelling rodent that inhabits the arid grassland, shrubland, and alkali sink habitats of the San Joaquin Valley and adjacent foothills. It is active year-round and lives in burrows that are either modifications of kangaroo rat burrows or are self-constructed. Nelson's antelope squirrel is omnivorous and will eat green vegetation, fungi, seeds, and more commonly, insects. The breeding season extends from late winter to early spring with young being born between March and April. Present populations can be found at elevations 165 feet on the San Joaquin Valley floor to approximately 3,609 feet in the Temblor Mountains. Loss of habitat due to agriculture, urbanization, petroleum extraction and the use of rodenticides has limited the species range, but the species has a moderate potential of occurrence.

Prairie Falcon (*Falco mexicanus*) - USFWS Birds of Conservation Concern; State Watchlist. This species ranges from the southeastern deserts northwest throughout the Central Valley and along the inner Coast Ranges and Sierra Nevada mountains. The species has a high potential to occur and it was observed during surveys. Prairie falcon distribution extends across annual grasslands to alpine meadows, but is associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. It eats mostly small mammals, some small birds, and reptiles. This bird requires sheltered cliff ledges for cover and they usually nest in a scrape on a sheltered ledge of a cliff overlooking a large, open area and sometimes nest on old raven or eagle stick nest on cliff, bluff, or rock outcrop.

Prairie falcon breeds from mid-February through mid-September, with the peak breeding season in April to early August and a scrape on a cliff or rock outcrop is typically used for nesting.. The nests of common raven, and golden eagle (*Aquila chrysaetos*) may be used as well. Clutches consist of four or five eggs and is incubated by the female. In California, the average home range size has been found to extend between 14,579 and 71,166 acres.

Western Burrowing Owl (*Athene cunicularia hypugaea*) - California State Species of Special Concern. This species has been documented in the CNDDDB within 1.25 miles northeast of the BSA, along 25th Avenue, but was not sighted during surveys. However, due to the presence of ground squirrel burrows and proximity to previous records to the northeast, burrowing owl has a moderate potential of occurrence. The species occurs primarily at elevations below 1,800 feet amsl and is considered a year-round resident breeding locally. The species occupies a range extending from northeastern California in the Sacramento Valley and the San Francisco Bay Area south into to southern California, throughout the southwestern deserts, and south to Mexico. Migration will occur with some non-resident birds moving south to Central America during September and October and back north to the U.S. and Canada to breed in March and April.

Burrowing owl prefers expanses of level, well-drained open habitat with sparse ground cover and few shrubs. The species generally inhabits the burrows of fossorial mammals, primarily California ground squirrels. Burrowing owl can be observed in habitats ranging from natural areas of grassland and desert to disturbed areas such as pasture, ruderal vacant lots, agricultural settings and areas of intense human activity like parking lots and roadsides. Peak foraging activity is concentrated around sunrise and sunset and food items include arthropods, rodents, birds, reptiles, amphibians, and carrion.. In California, the breeding season generally runs from March through August, peaking between April 15 and July 15. Females lay a clutch of approximately four to six eggs and both parents care for the young. The female remains with the young while the male hunts to provision the brood for approximately 40 to 45 days after hatching.

Loggerhead Shrike (*Lanius ludovicianus*) - California State Species of Special Concern. This species has a high potential to occur. It inhabits open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns, which may help keep predators away. The species is primarily insectivorous and the species frequents agricultural fields and pastures. The species covers a broad range occupy similar habitats in winter, although winter ecology of the species has not been thoroughly studied. The species range includes agricultural habitats, particularly pastures and hayfields.

The species breeds in open areas dominated by grasses and/or forbs, interspersed with shrubs or trees and bare ground. In the absence of trees or shrubs, they sometimes nest in brush piles or tumbleweeds, building nests 2 to 5 feet off the ground. Nesting season begins in January or February in the southern part of the range and late April or May in the north. The female often lays two to three broods of four to seven eggs. Loggerhead shrike was observed foraging on the BSA during 2021 surveys.

American Badger (*Taxidea taxus*) - California State Species of Special Concern. This species was observed during surveys and is found throughout California from below sea level to 12,000 feet amsl with the exception of areas in the northern coast. The species can be found in a variety of habitats with friable soil, which it requires for burrowing, but is most commonly found in open country, such as grasslands, savannas, and mountain meadows, as well as open stages of scrub and forest habitats. It tends to avoid heavily wooded areas and habitats with rocky soils.

American badger is solitary outside of the mating season and is an avid burrower used in the pursuit of prey, but that also may be used for sleeping and rearing young. A typical American badger den extends as far as 10 feet below the surface and contains approximately 33 feet of tunnels. American badgers use multiple burrows within their home range, but may not use the same burrow more than once a month. It is carnivorous and primarily eats small fossorial mammals, such as ground squirrels, kangaroo rats, and chipmunks (*Tamias spp.*), but will also consume other mammals as well as birds, reptiles, bees, earthworms, and carrion. American badger measures between 20 and 34 inches from head to tail, with the tail making up 4 to 6 inches of this length. They breeds annually in late summer or early autumn and have litters of one to five offspring. Young of the year may emerge from the den as early as five to six weeks in age with juveniles dispersing at five to six months..

California horned lark (*Eremophila alpestris actia*) - California State Watchlist. This species is found from grasslands along the coast and deserts extending from near sea level to alpine dwarf-shrub habitat above tree-line and in coniferous or chaparral habitats. The BSA has a high potential of supporting this species, as it was observed foraging during surveys. Typical nesting habitat is on open ground and suitable nesting habitat is present in areas that are not regularly disced. Small flocks may remain to winter on windswept, snow-free areas at high elevations in the Sierra Nevada. Prey items include insects, snails, and spiders and during breeding season grasses, forbs, seeds, and other plant matter. The nest is grass-lined and

cup-shaped, constructed in a depression on open ground. Once the breeding is over, the birds often form large flocks foraging and roosting together.

Common Wildlife Species

The BSA supports foraging and potential nesting habitat for multiple commonly occurring wildlife species. During the daytime field surveys, birds observed included mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), American kestrel (*Falco sparverius*), western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris actia*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), white-crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), and killdeer (*Charadrius vociferus*). One common raven was perched close to an inactive nest structure north of the BSA.

Wildlife surveys also revealed that the BSA supports common mammals including coyote (*Canis latrans*; trail camera detections), California ground squirrel, striped skunk (*Mephitis mephitis*) and black-tailed jackrabbit. Multiple canid tracks corresponding to coyote prints were sighted along the dirt road adjacent to the proposed gen-tie line alignment. Several juvenile side-blotched lizards (*Uta stansburiana*) were sighted within the BSA (gen-tie line alignment).

Critical Habitat

USFWS has not designated or proposed any critical habitats on or near the project site under the FESA (16 U.S. Code [USC] 1533(a)(3)). Critical habitat is designated for the survival and recovery of federally listed endangered and/or threatened species. Protected habitat includes areas for foraging, breeding, roosting, shelter, and movement or migration. There is no critical habitat on the project site.

Waters and Wetlands

Aquatic Resources

Jurisdictional waters include aquatic resources such as streams, creeks, lakes, riparian areas, wetlands, and certain aquatic vegetation communities, which are considered sensitive biological resources and can fall under the jurisdiction of federal and/or State regulatory agencies including the U.S. Army Corps of Engineers (USACE), CDFW. No waters or wetlands of the United States were detected within the project site or immediately surrounding areas during the surveys and there were no drainages or other such resources within the areas proposed for installation of solar panels or the BESS.

The aquatic resource delineation was conducted in accordance with the USACE Wetland Delineation Manual (USACE 1987), the Interim Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region (Arid West Supplement; USACE September 2008), and A Guide to the Ordinary High-Water Mark (OHWM) for non-perennial streams in the western mountains, valleys, and coast region (USACE 2014).

Four drainages were located within the project property and the northerly portions of the BSA but outside the portion of the site proposed to be used for solar panels and the BESS (See **Figure 4.4-5: Drainages Map**). The gen-tie lines and the access road would be extended in the vicinity of these areas which are near the existing Arco Substation and King Road. The drainages and their descriptions are shown in **Table 4.4-3: Summary of Aquatic Resources**, below and the drainages are discussed in further detail immediately following.

TABLE 4.4-3: SUMMARY OF AQUATIC RESOURCES

Feature Name	Type	Jurisdiction	Acres (ac)/Linear Feet
Drainage A	Ephemeral/Artificial	None	0.03 ac/865 lf
Drainage B	Ephemeral/Artificial	None	0.03 ac/865 lf
Detention Basin	Artificial	None	1.12 ac
TOTAL			1.6 ac / 2,349 lf

Drainage A and Drainage B

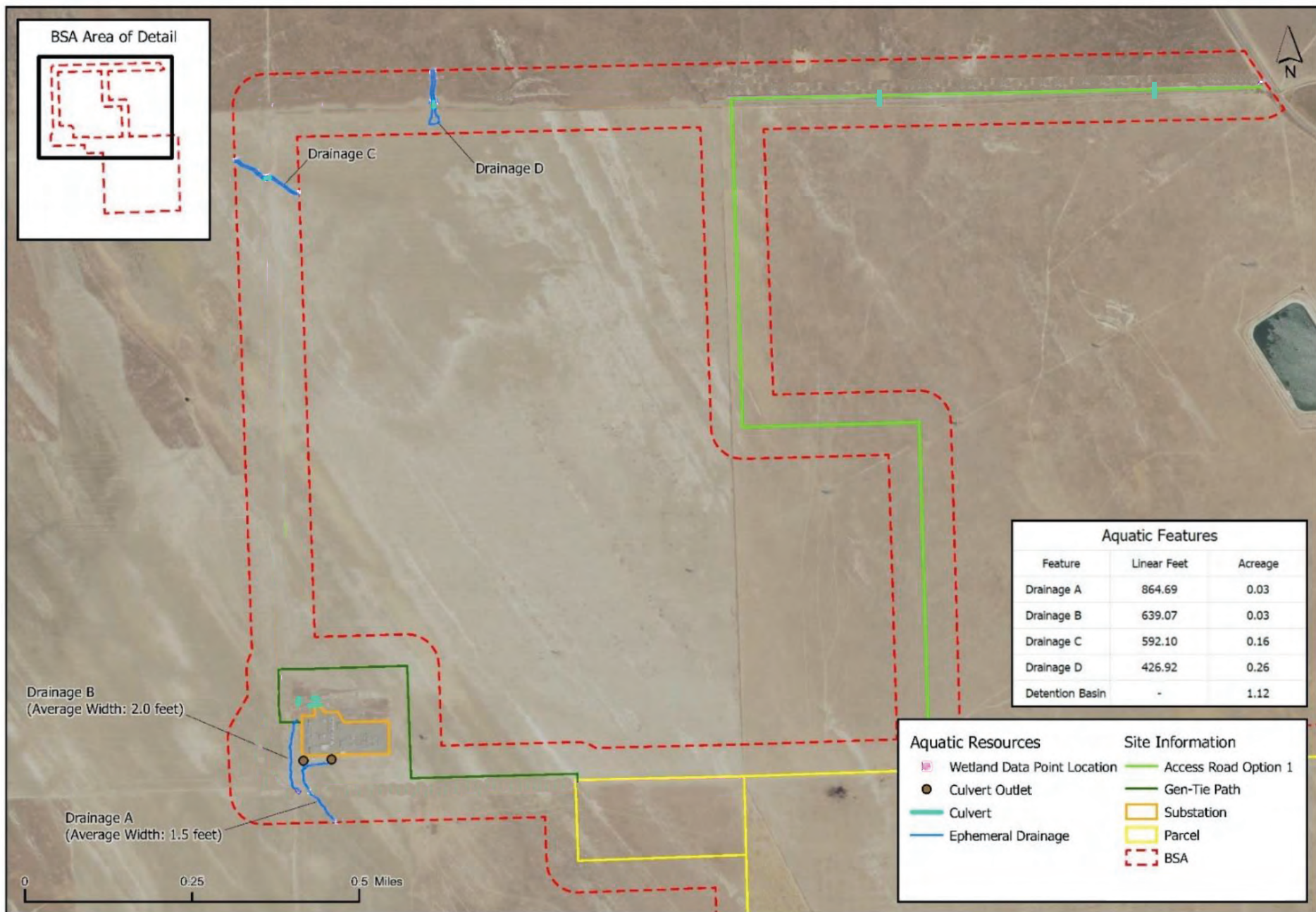
Drainages A and B are ephemeral and were created incidental to the construction of the existing substation to the west of the proposed solar installation and the access road. Drainage A occupies approximately 0.03 acres and has a length of 865 linear feet. Drainage A does not have distinguishable bed and bank, has a substrate of clay and alkaline soils and originates from a pair of 24-inch culverts that pass storm water from within the substation to the southeast. Flows appear to terminate as sheet flow across the CAG community outside the BSA. Drainage A is 2 to 4 inches in depth, has erosion rills, and is sparsely vegetated with tumbleweed and cheese weed. Most of Drainage A is subject to heavy disking, grazing, and vehicle traffic and does not support aquatic flora or fauna.

Drainage B is similar to Drainage A in terms of substrate, vegetation, and disturbance, but is up to 8 inches deep in some locations. Drainage B occupies approximately 0.03 acre and is 639 feet in length. Drainage B originates from a series of small culverts north of the substation and diverts water to the west and south. Natural sheet flow from the west also contributes to Drainage B. Upland grasses and forbs were present in the deeper parts of Drainage B during the September 2020 and March 2021 surveys. Ephemeral flows from Drainage B partially disperse into manmade depressions adjacent to the dirt access roads. Wetland data points were taken in the adjacent depressions and are discussed below. The remaining flows disperse as sheet flow prior to crossing Drainage A.

Flows in Drainages A and B are ephemeral in nature and are not considered Waters of the US under current regulations (33 CFR 328.3(a)(1-8)). These drainages are not tributaries to any waters list in 33 CFR 328.3(a)(1-4) since they terminate as sheet flow across uplands. Thus, the drainages are not subject to USACE (CWA Section 404) or the SWRCB (CWA Section 401) jurisdiction. In addition, without a clear ordinary high water mark (OHWM), Drainage A and B likely do not meet waters of the state criteria nor the State wetland definition. Neither Drainage A nor B support aquatic flora or fauna, neither have riparian canopies, both are subject to ongoing disking from the substation, and both lack well defined bed and banks. Dirt access roads bisect both drainages. Neither Drainage A nor B would likely represent regulated CDFW stream systems.

Detention Basin

The detention basin is an artificial structure created in an upland area along the eastern perimeter of the project site. The detention basin occupies approximately 1.12 acres. Based on aerial photos, the detention basin was created sometime prior to July 2003. A culvert conveys water from the orchard to the east. A pipe grid extends westerly from the detention basin and water is pumped into the pipe grid and sprinklers the rangeland spray field area of the BSA. The detention basin is not a water of the US under current regulations. (33 CFR 328.3(a)(1-8)).



Source: Surf to Snow, 2022

FIGURE 4.4-5: Drainages Map
Draft Environmental Impact Report
Azalea Solar Project



Not to scale

Plant Communities

The CDFW-CNPS vegetation rapid assessment method (CDFW 2019) was used to determine plant communities present and recognized alliances. Habitat types were characterized within the survey areas, based on data base information, dominant and characteristic species, topographic position, slope, aspect, substrate conditions, hydrologic regime, and evident disturbance for each habitat type. Vegetation ranged from grass dominant with moderate coverage in the east, to sparse and ruderal in the west. All plant communities within the BSA were dominated by annual non-native grasses and non-native forbs. No sensitive plant communities were identified during the vegetation assessment. Plant communities within the BSA are heavily influenced by the anthropogenic disturbance with a large majority of the BSA subject to past agriculture and current cattle grazing.

California Annual Grassland

The CAG community occurs on moderately disturbed grazing lands within the BSA. Based on species cover, the designation of smooth barley (*Hordeum murinum ssp. glaucum*) Semi-Natural Stand best describes the California annual grassland community. *Hordeum murinum ssp. glaucum* had greater than 30% relative cover throughout the Stand. Other associated species that were co-dominant include Russian thistle or tumbleweed (*Salsola tragus*) and redstem filaree (*Erodium cicutarium*). These three dominant species have a Cal-IPC negative ecological impact of Moderate, Limited and Limited, respectively.

Despite the dominance of the three non-native, invasive species, native forbs persist interspersed throughout the CAG community. In the northeastern area of the annual grassland, soils are sandy and plant growth appeared stunted for most plants, but smooth barley was a clear dominant. Much of the northeastern area was disced occasionally or not at all and native forbs, common goldfields (*Lasthenia gracilis*), common fiddleneck (*Amsinckia intermedia*), shining pepperweed (*Lepidium nitidum*), valley popcorn flower (*Plagiobothrys canescens*), and blue dicks (*Deuterostomia capitatus*) were all observed especially along the access road during the field surveys.

The southern and western areas of the CAG contain more clay and moderately alkaline soils. The total vegetation cover was observed to decrease toward the west, especially around the substation. The southern area was not disced prior to the September 2020 or March 2021 surveys and cattle grazing is current largest source of disturbance to plant communities. Redstem filaree and smooth barley were co-dominant in the southern area. Interspersed native forbs included California plantain (*Plantago erecta*), buckwheat (*Eriogonum spp.*), microceris (*Microseris spp.*) and shining pepperweed.

The areas surrounding the proposed substation have an increase amount of clay and alkaline soils and also have undergone disturbance from discing and substation activities. Tumbleweed was the dominant plant species in this area, but redstem filaree and smooth barley occurred. A native forb, vinegarweed (*Trichostema lanceolatum*), was abundant on alkaline soils southeast of the Substation. In stormwater drainages surrounding the Substation and culverts along the access road, cheese weed (*Malva parviflora*) was often the dominant plant.

Rangeland/ Spray Field

The Rangeland/Spray Field (RSP) community occurs on within areas proposed for development of the solar facility and encompasses most of the BSA. A cattle yard and fence bisect this community from northwest to southeast. Aluminum pipes are connected in a grid pattern and sprinklers are used to spray water from the detention basin across the rangeland.

Native forbs are sparse due to increased water input and disturbances. Smooth barley is dominant, but several other non-native grasses are abundant including ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis ssp. rubens*), and Bermuda grass (*Cynodon dactylon*). Total vegetation cover is increased in the RSP plant community and plant growth is noticeably greater in sprinkler areas. Native forbs are uncommon in this area, but jimsonweed (*Datura wrightii*), white nightshade (*Solanum americanum*), and procumbent pigweed (*Amaranthus blitoides*) are common.

Developed/Disturbed

The developed/disturbed community included asphalt and dirt access roads, the substation and laydown yard, a detention basin, and a cattle yard. Vegetation in these areas is sparse and ruderal plants including tumbleweed, ripgut brome, red brome, and puncture vine (*Tribulus terrestris*) were dominant and common along access roads. London rocket (*Sisymbrium irio*) and lamb's quarters (*Chenopodium album*) were common around the detention basin.

Wildlife Movement Corridors

Sensitive wildlife was observed and documented within the BSA. Sensitive species that were observed may utilize the BSA as a wildlife corridor between surrounding undeveloped lands typically to the north and west. As habitat within the BSA is marginal due to disturbances, the project site would likely serve to facilitate movement and foraging activity for animals and local wildlife species with a high potential to occur could move through the BSA while foraging. Migratory wildlife also could use the BSA as a stopover during the migration seasons. Movement of sensitive wildlife to and from other nearby areas is likely to be impacted by discing activities (i.e. during and after discing has been completed).

4.4.3 Regulatory Setting

Federal

Endangered Species Act of 1973 (USC Title 16, Sections 1531–1543)

The FESA and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. In addition, the FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA also provides a program for the conservation and recovery of threatened and endangered species as well as the conservation of designated critical habitat that USFWS determines is required for the survival and recovery of these listed species.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations Title 50, Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing “take” (i.e., to harass, harm, pursue, hunt, wound, kill, etc.) that may occur incidental to an otherwise legal activity.

Section 9 lists those actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of “harm” includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. “Harass” is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at Code of Federal Regulation (CFR) Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS, and at CFR Title 50, Sections 217, 220, and 222 for species under the jurisdiction of the National Marine Fisheries Service.

FESA Section 4(a)(3) and (b)(2) requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in FESA Section 3(5)(A): (1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection; and (2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act (USC Title 16, Sections 703–711)

The MBTA, first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (USC Title 16, Section 703). The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Bald and Golden Eagle Protection Act of 1940 (USC Title 16, Section 668, enacted by 54 Statute 250)

The Bald and Golden Eagle Protection Act of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species, and establishes civil penalties for violation of this act. Take of bald and golden eagles includes to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” To 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 (Federal Register volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act (USC Title 33, Sections 1251–1376)

The federal CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project proponent for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCB administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. USACE implementing regulations are found at CFR Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

State

California Endangered Species Act (CFGC Section 2050 et seq.)

The CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under the CESA. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is "consistent" with the CESA under CFGC Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project proponent would have to apply for a take permit under Section 2081(b).

Regional Water Quality Control Board

Under CWA Section 401, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet state water quality standards. The RWQCB also regulates waters of the state under the Porter-Cologne Act Water Quality Control Act. The RWQCB requires projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the state, which may include waters deemed 'isolated' or not subject to Section 404 jurisdiction, under the Solid Waste Agency of Northern Cook County (SWANCC) legal decision. The thrust of the SWANCC legal decision is that isolated, non-navigable, and intrastate waters are not "waters of the United States" subject to USACE jurisdiction under the CWA. Filling, dredging, or excavation of isolated waters may constitute a discharge of waste to waters of the state and if so, then prospective dischargers are required to file a Report of Waste Discharge to obtain Waste Water Discharge Requirements as authorization for that fill or waiver thereof from the RWQCB.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under CWA Section 401.

California Fish and Game Code

Sections 1600–1616. Under these sections of the CFGC, the project proponent is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a “stream” is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

Sections 2080 and 2081. CFGC Section 2080 states that “No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act.” Pursuant to CFGC Section 2081, CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project proponent ensures adequate funding to implement the measures required by CDFW, which makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Sections 3503, 3503.5, 3513, and 3800. Under these sections of the CFGC, the project proponent is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds of prey or their nests or eggs; the taking or possessing of any migratory nongame bird as designated in the MBTA; the taking, possessing, or needlessly destroying of the nest or eggs of any bird; or the taking of any nongame bird pursuant to CFGC Section 3800.

Sections 3511, 4700, 5050, and 5515. Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the CFGC. These statutes prohibit take or possession 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.

Sections 4000–4003. Under Section 4000 of the CFGC, it is unlawful to conduct activities that would result in the taking, possessing, or destroying of any fur-bearing mammals, including kit foxes, without prior authorization from the CDFW.

CEQA Guidelines, Section 15380

In addition to the protections provided by specific federal and state statutes, *CEQA Guidelines* Section 15380(b) provides that a species not listed on the federal or state list of protected species nonetheless may be considered rare or endangered for purposes of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the ESA and the section of the CFGC dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effort on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDDB as sensitive are considered by CDFW to be significant resources and fall under the *CEQA Guidelines* for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Native Plant Protection Act (CFGC Sections 1900–1913)

California's NPPA requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local

Kern County General Plan

The Kern County General Plan identifies the federal, state, and local statutes, ordinances, or policies that govern the conservation of biological resources that must be considered by Kern County during the decision-making process for any project that could affect biological resources.

The Land Use, Open Space, and Conservation Element of the Kern County General Plan states that the element provides for a variety of land uses for future economic growth while also ensuring the conservation of the County's agricultural, natural, and resource attributes. Section 1.10, *General Provisions*, provides goals, policies, and implementation measures that apply to all types of discretionary projects including the proposed project and needed associated infrastructure.

Chapter 1. Land Use, Open Space, and Conservation Element

1.10 General Provisions; 1.10.5 Threatened and Endangered Species

Goal

Goal 1: Ensure that the County can accommodate anticipated future growth and development while a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

Policies

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and Federal laws.

Policy 28: The County should work closely with State and Federal agencies to assure that discretionary projects avoid or minimize impacts on fish, wildlife, and botanical resources.

Policy 29: The County will seek cooperative efforts with local, State, and Federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

Policy 31: Under the provisions of CEQA, the County, as lead agency, will solicit comments from the CDFW and the USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.

Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

Measure S: Pursue the development and implementation of conservation programs with State and federal wildlife agencies for property owners desiring streamlined endangered species mitigation programs.

Chapter 5. Energy Element

5.2 Importance of Energy to Kern County

Policy

Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.

Policy 9: The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.

5.2 Importance of Energy to Kern County

Policy 4: The County should encourage solar development in the desert and valley regions previously disturbed and discourage development of energy projects on undisturbed land supporting State of federally protected plant and wildlife species.

Kern County Zoning Ordinance

Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)

In November 2011, Kern County approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing character of Kern County by requiring a minimal approach to outdoor lighting, recognizing that excessive illumination can create a glow that may obscure the night sky, and that excessive illumination or glare may constitute a nuisance. The ordinance provides requirements for outdoor lighting within specified unincorporated areas of Kern County in order to accomplish the following objectives:

- Objective 1: Encourage a safe, secure, and less light-oriented night-time environment for residents, businesses and visitors.
- Objective 2: Promote a reduction in unnecessary light intensity and glare, and to reduce light spillover onto adjacent properties.
- Objective 3: Protect the ability to view the night sky by restricting unnecessary upward projections of light.
- Objective 4: Promote a reduction in the generation of greenhouse gases by reducing wasted electricity that can result from excessive or unwanted outdoor lighting.

Kern County Development Standards

The Kern County Development Standards have specific regulations pertaining to lighting standards including the requirement that lighting must be designed so that light is reflected away from surrounding land uses so as not to affect or interfere with vehicular traffic, pedestrians, or adjacent properties.

4.4.4 Impacts and Mitigation Measures

This section evaluates the impacts to biological resources that may occur during construction and operation of the proposed project. It describes the sensitive biological resources located on and adjacent to the project site that may be affected and identifies the thresholds used to determine whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, where applicable.

Methodology

This section addresses the potential direct and indirect impacts on biological resources that would result from implementation of the proposed project and provides an analysis of significance for each impact. For those impacts considered to be potentially significant under CEQA, mitigation measures are proposed to avoid, minimize, and/or mitigate the impacts. Biological resources evaluated included sensitive natural communities and aquatic resources, special-status plant and animal species, and wildlife movement corridors. The potential for special-status species and habitats to occur on the project site is based on the results of database research, biological assessments, surveys conducted on the project site and vicinity, presence of suitable habitat, and the proximity of the project site to previously recorded occurrences in the CNDDB, CDFW, and USFWS data that were documented in a biological resources technical report prepared for the project.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in of the *CEQA Guidelines* Appendix G, to determine if a project could potentially have a significant adverse effect on biological resources.

A project would have a significant adverse effect on biological resources if it:

- a. Has 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 the USFWS;
- b. Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or the USFWS;
- c. Has a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Project Impacts

Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Special-Status Plants

The proposed project involves ground disturbance, construction, and operational activities involved with ground clearing (grubbing, clearing and grading), installation of solar panels and support structures, construction of the BESS, access roadways and other needed infrastructure and improvements that could result in impacts to special status plant species. Impacts also could occur during operations and decommissioning activities of the solar site. To determine the potential for project impacts, field surveys for biological resources including plant species occurred over ten days starting in September 2000 on the 14th, and 16th through 18th, and six consecutive days during March 2021, the 14th through the 19th.

Previous records searches of the CNDDDB revealed that eleven special-status plant species had been recorded in the nine-quad area surrounding the BSA. During the surveys it was determined three species (Forked fiddleneck, Hoover's Eriastrum, and Jared's pepper-grass) have no potential to occur due to a lack of suitable habitat and five species (Howell's onion, crownscale, Lost Hills crownscale, recurved larkspur, and king's gold) have a low potential to occur in the BSA. Three plant species were determined to have a moderate potential to occur in the BSA (California jewelflower, San Joaquin Woollythreads, and San Joaquin blue curls). None of the plant species were observed during Spring surveys and thus, no additional surveys were recommended or needed for these species. It should be noted that during the site survey, no special status plant species were observed within the BSA.

Three of the special status species are summer/fall blooming plants including San Joaquin bluecurls, as well as Lost Hills crownscale, and crownscale but these two species, as noted above, have a low potential to occur. California jewelflower blooms from February to May. The remaining 8 special status plants are spring blooming species. Surveys were conducted during the evident and identifiable period for all spring blooming plants except San Joaquin woollythreads and California jewelflower. These species may occur within the BSA during a year of above normal rainfall. The three species with moderate potential to occur are discussed below. A complete list of the plant species observed is provided in Appendix E which contains the Biological Technical Resources Report prepared for the project.

San Joaquin Woollythreads. This species has a moderate potential and there is suitable habitat (sandy soils and non-alkaline grassland) within the project site. Although the species was not observed the site is within their range and there are CNDDDB records within the region, one of which is 2.8 miles from the project site.

California jewel flower. The species has a moderate potential to occur as the project site contains suitable habitat that includes sandy soils and non-alkaline grassland. While the species was not observed during the site surveys and the two previous recordings within the nine-quad area in the CNDDDB are extirpated or assumed extirpated, the species may occur within the project site especially during wet years. It also has been documented in southern Kern County on the Tejon Ranch quad.

San Joaquin Bluecurls. This species has a moderate potential to occur within the project site. The species occurs on disturbed sites in grasslands and is found in sandy soils and non-alkaline grassland. Although the species was not observed and there are no CNDDDB records within the nine-quad area surrounding the BSA at the time it was listed as a CNPS CRPR 4.2 plant so may not have been recorded. Records do show the species in the Avenal Gap approximately 5.5 miles away.

Regarding all of the above listed species, it should be noted that rainfall totals in the vicinity of the study area during the 2020–2021 rainy season were below normal and the low rainfall may have affected the growth and potential to identify these plants. Although the plants were not identified, they may be present during years with higher rainfall. Thus, the proposed project would have potential to have direct and indirect impacts associated with project construction and operation. Impacts to special status plants could be potentially significant, and mitigation would be required. The proposed project includes biological monitoring, worker awareness training, general avoidance methodologies, preconstruction surveys, and measures to avoid introduction of invasive species. This includes Mitigation Measures MM 4.4-1 through MM 4.4-6 and MM 4.4-12, listed further below. Implementation of these mitigation measures would reduce impacts to less than significant.

Special-Status Wildlife

The proposed project would require ground disturbance and construction activities that could result impacts to special status wildlife species if they are present during construction or are disturbed during continuing project activities including maintenance and decommissioning activities. Site disturbances would include grubbing and grading activities as well as trenching that could disturb underground burrow systems. This could result in impacts resulting from removal and/or degradation of existing habitat, thereby reducing its availability to local wildlife populations. Wildlife also could be affected by interactions with on-site personnel, traffic, and equipment operations. Impacts also could occur from vehicle collisions, entrapment in trenches, crushing by equipment or stockpiled materials, and burial in collapsed burrows.

Construction activities also would result in the generation of noise, vibrations, and introduction of nighttime lighting which could result in disturbances but these disturbances would be unlikely to result in loss.

Permanent and temporary loss of habitat as a result of construction activities could directly affect these and other animal species. Indirect effects also would occur due to loss of foraging habitat for wildlife as a result of construction and the permanent installation of the solar facilities. In response to the increase in human activity (e.g., equipment operation, vehicular traffic, and noise), wildlife may avoid the sources of disturbance and move to other habitats. Wildlife habitats adjoining the project site may also be affected by fugitive dust produced by vehicles and noise during grading and wildlife in these areas may avoid or move away.

A total of 16 sensitive wildlife species have been documented in CNDDDB records within a 5-mile radius of the BSA. Six species have a low or no potential to occur and include San Joaquin Coachwhip, Tri-colored blackbird, short-nosed Kangaroo rat, Tipton Kangaroo rat, Tulare grasshopper mouse, and Western spadefoot toad. Ten of the sensitive wildlife species have a moderate to high potential to occur or are sensitive species that are on state and/or federal watchlists or were observed during surveys. These ten species include BNLL, Prairie falcon, Swainson's Hawk, Western burrowing owl, California horned lark, loggerhead shrike, American badger, Giant kangaroo rat, Nelson's antelope squirrel, and San Joaquin kit fox and are discussed in more detail below.

BNLL – This species is documented within the region and there are recordings within five miles of the project site in the CNDDDB. BNLL also has been documented along the project's gen-tie line alignment.

The project site contains suitable habitat and there is a high potential the species is present. If the species is present during project construction, operations, or decommissioning, significant impacts associated with ground disturbance, vibration, include habitat loss, burrow collapse or entrapment, reduced reproductive success and direct mortality, could result. Project related activities also could alter the daily behaviors of individuals and adversely affect foraging activity and reproductive success during the short-term construction period. Habitat loss could result in indirect impacts through increased competition for limited resources over the long-term. Impacts from these activities could be potentially significant and mitigation would be required. Mitigation Measure MM 4.4-1, MM 4.4-2, and MM 4.4-4, MM 4.4-5, and MM 4.4-12 would require general avoidance measures and Mitigation Measures MM 4.4-8 and MM 4.4-9 would require preconstruction and protocol surveys for BNLL. Implementation of these measures would reduce impacts to less than significant.

Prairie falcon – The prairie falcon has a high potential to occur on the project site and was observed during site surveys. The project site contains suitable foraging habitat but does not contain nesting habitat. This species uses sheltered cliff ledges for cover and they usually nest in a scrape on a sheltered ledge of a cliff overlooking a large, open areas but may nest in previously occupied nests of other species cliff, bluff, or rock outcrop. No such habitat exists on or near the site. However, prairie falcon distribution extends across annual grasslands to alpine meadows and primarily associated with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. The species eats mostly small mammals, some small birds, and reptiles and hence, may use the project site as foraging habitat.

Without avoidance measures the project could have the potential to impact prairie falcon. Potential impacts would be avoided through implementation of general avoidance Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, and MM 4.4-12 and specific measures requiring surveys for nesting birds and raptors and APLIC compliance, MM 4.4-10 and MM 4.4-11. With implementation of these mitigation measures, project level impacts to prairie falcon would be less than significant.

Swainson's Hawk. Swainson's hawk has a moderate potential to occur in the area and use the project site for foraging habitat. Swainson's hawk prefers open grassland or agricultural habitat, and preys on other birds, invertebrates, and rodents that may be present or utilizing the project site. There is no nesting habitat within the project site and the project site does not contain scattered trees or trees within riparian corridors that would be used for roosting or nesting. Without avoidance measures the project could have the potential to impact Swainson's hawk. Potential impacts would be avoided through implementation of general avoidance Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, and MM 4.4-5. Specific Mitigation Measures outlining surveys for nesting birds and raptors and APLIC compliance would be required under MM 4.4-10 and MM 4.4-11 respectively. With implementation of these mitigation measures, project level impacts to Swainson's hawk would be less than significant.

Burrowing Owl. This species can be a year round resident and there is a history of the species breeding locally. While no species were observed within the project site, there is documented presence 1.9 miles of the project site. The site contains expanses of level, well drained open habitat with sparse ground cover and few shrubs. The project site contains potentially suitable breeding and foraging habitat but there was no sign of burrowing owl nor were any observed during field surveys. Nonetheless, direct impacts to the burrowing owl and its habitat could occur as a result of project construction and through the direct loss of available habitat, including for foraging, and potential breeding burrows due to construction activities and increased human presence; human presence on the site will be limited during operations. The affected habitat could be restored during decommissioning activities. Besides direct impacts to burrows and habitat,

construction activities could directly impact occupied burrows, if they exist on the site at the time of construction, resulting in injury or mortality to individual owls.

Other impacts to the species could occur from birds flying away from burrows and collisions with machinery or vehicles and making the species more likely to be preyed on by other animals such as red-tailed hawks and coyotes. Indirect impacts could also occur during construction if burrowing owls are nesting in adjacent offsite areas within 250 feet of the project site, and noise from construction activities that could harass an owl to the point of abandoning an active burrow. Other indirect impacts include vehicle emissions, dust, habitat degradation from introduction of non-native plants or other factors. Any adverse direct or indirect impacts to burrowing owls as a result of construction would be considered significant under CEQA. General avoidance Mitigation Measures would be required under MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, and MM 4.4-12. Specific mitigation measures requiring preconstruction surveys for burrowing owl, surveys for nesting birds and raptors, and APLIC compliance would be required under MM 4.4-7, MM 4.4-10, and MM 4.4-11 respectively. With implementation of these mitigation measures, project level impacts to burrowing owl would be less than significant.

California Horned Lark – Is on a species watch list and is found from grasslands along the coast and deserts extending from near sea level to alpine dwarf-shrub habitat above tree-line and in coniferous or chaparral habitats. This species could be impacted, similar to the burrowing owl above from construction activities, vehicle strikes, disruption of nesting and foraging activities and from indirect impacts from dust and degradation of habitat. General avoidance mitigation measures would be required under Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, and MM 4.4-12. Mitigation requiring surveys for nesting birds and raptors and APLIC compliance would be required under MM 4.4-10 and MM 4.4-11 respectively. The above listed mitigation measures would reduce the potential impacts to California horned lark to less than significant.

Loggerhead Shrike - Loggerhead shrike is a California Species of Special Concern and occurs in most of California and is absent only in the Sierra Nevada and Cascade Mountain ranges. The species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. The species frequents agricultural fields and pastures, where it preys on insects. Potential nesting and foraging habitat for loggerhead shrike is present. Although this species was not observed during the field surveys it could forage and nest within the project site and has a high potential for occurrence. As discussed above, this species could be impacted from construction activities, vehicle strikes, disruption of nesting and foraging activities and from indirect impacts from dust and degradation of habitat. General avoidance mitigation measures would be required under Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, and MM 4.4-12, surveys for nesting birds and raptors and APLIC compliance would be required under MM 4.4-10 and MM 4.4-11 respectively. The above listed mitigation measures would reduce the potential impacts to loggerhead shrike to less than significant.

American Badger. This species is found in dry, open habitats including grassland and open woodland. Suitable burrowing habitat requires dry, sandy soil. Although badger is widely distributed across California, the species may be comparatively uncommon or absent from areas where it occurred historically. Badger has been observed within 6.5 miles of the site, suitable habitat is present for foraging and denning. Although active dens were not found, the species has a high potential for occurrence. A badger was detected on a trail camera placed along the dirt road adjacent to the proposed gen-tie line alignment and large burrows, although unoccupied were found north of the dirt road. This could indicate the species was using the BSA for foraging purposes at the time of the surveys. No sign of recent use by badgers was noted, though future

use could occur. The badger could utilize existing ground squirrel burrow habitat or create new burrow habitat within or near the BSA.

The project could result in impacts to American badger from project construction activities may include permanent and temporary loss of habitat, injure or killing of an individual or young within an occupied burrow, or collisions from project related equipment. Indirect effects due to displacement of this species could also occur as a result of construction activities associated with the project. These types of potential impacts to this species would be considered significant without mitigation. To reduce potential significant impacts to American badger Mitigation Measures, MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, and MM 4.4-12 would be implemented to reduce impacts less than significant.

Giant Kangaroo Rat – This species is documented within 4.1 miles of the BSA within the last 33 years and the project site has suitable foraging and burrowing habitat. An unidentified kangaroo rat was observed with a remote camera at the southern part of the BSA close to the cattle containment area. Due to the range, records of occurrence, the size of the animal and shape of its head, the animal may have been a giant kangaroo rat. Although no confirmation could be obtained, this and the proximity to known giant kangaroo rat occurrences listed in CNDDDB records indicates the species has a high potential for presence. Impacts to the giant kangaroo rat could occur during ground-disturbing project activities and result in injury, mortality, and would result in habitat modification and loss from construction and installation of the solar panels and associated facilities. To reduce potential significant impacts to giant kangaroo rat to a less than significant level, Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, and MM 4.4-12 would be implemented.

Nelson's Antelope Squirrel – This species inhabits the arid grassland, shrubland, and alkali sink habitats of the San Joaquin Valley and adjacent foothills and are known to occupy the San Joaquin Valley. Accordingly, there have been two occurrences documented in 2006 within 3 miles of the BSA. In addition, the project site contains suitable foraging and burrowing habitat and it has a moderate potential to occur. Impacts to Nelson's Antelope squirrel could occur during ground-disturbing project activities and result in injury, mortality, and would result in habitat modification and loss from construction and installation of the solar panels and associated facilities. To reduce potential significant impacts to Nelson's antelope squirrel to a less than significant level, Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, MM 4.4-8, and MM 4.4-12 would be implemented.

San Joaquin Kit Fox-This species occurs, or historically occurred, throughout most of the San Joaquin Valley and there are several occurrences within a 5- mile radius of the BSA in the CNDDDB, one of which is one-mile north of the property site. Although dens were not located within the project site, the site has potential to be used for denning and foraging. If the species is present during construction, individual animals could be injured or killed by earthmoving activities and movement of large equipment used onsite, as well as delivery vehicles and personal vehicles. In addition, SJKF moving through the construction work area could be subject to vehicular mortality if present during work activities. To reduce potential significant impacts to giant SJKF to a less than significant level, Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, MM 4.4-5, and MM 4.4-12 would be implemented.

Nesting and Migratory Birds. Impacts to special status bird species are discussed above, but there is the potential for other project-related direct impacts on nesting birds that could occur during construction. Impacts could mortality from crushing during construction or vehicle collisions with nesting birds and/or destruction of nests and eggs during vegetation clearing and grading with heavy machinery. Potential indirect impacts include interference with reproductive success and nest abandonment in adjacent areas from increased human presence and increased noise levels (and vibration) from project construction.

Reproductive and nest impact could occur if construction occurs during the breeding season, which is generally considered to be February 1 through August 31 in the Valley Region. Impacts to these species would be considered significant.

General avoidance mitigation measures would be required under Mitigation Measures MM 4.4-1, MM 4.4-2, MM 4.4-4, and MM 4.4-5, surveys for nesting birds and raptors and APLIC compliance would be required under MM 4.4-10 and MM 4.4-11 respectively. The above listed mitigation measures would reduce the potential impacts to nesting and migratory birds to less than significant.

Operations and Maintenance

Direct impacts to special-status species are unlikely to result from project operation and maintenance activities because the project will not remove habitat of special-status species on the project site. . Some wildlife movement through or around the project site would still be expected by minimized through the use of fencing but the use of wildlife fencing as appropriate would still allow limited movement. Additionally, Mitigation Measures MM 4.4-2 and MM 4.4-4 require methods designed to reduce wildlife mortality and impacts, promote long-term project site suitability, and educate onsite personnel. However, maintenance activities within the project site could impact the special-status species if avoidance measures are not implemented. Project operation could result in indirect impacts to wildlife in proximity to the project if nighttime lighting is used. In addition, the potential indirect impact from nighttime lighting during operation and maintenance would be minimized through compliance with all development standards, the Kern County Zoning Ordinance, and the goals, policies, and implementation measures of the Kern County General Plan. The proposed project would be required to implement Mitigation Measure MM 4.1-4, which requires compliance with Kern County's Dark Skies Ordinance to minimize nighttime lighting in unincorporated areas of Kern County.

Nesting and Migratory Birds. Direct and indirect impacts to avian species may occur during project operation and maintenance through individual collisions with project facilities and equipment including transmission wires, fencing, array structures, and heavy equipment. Such risks are commonplace with most human development activities. The factors that have been empirically demonstrated to result in elevated collision risk at various types of facilities and structures (e.g., wind turbines,) are not present at the project site, which consists of low-height PV arrays and a few structures exceeding the 20-foot height of PV modules, and would incorporate only minimal lighting and adhere to best management practices in an effort to avoid attracting avian species. Thus, while individual impacts may be expected to occur due to collisions with project facilities and equipment, the risk of significant impact to avian populations is minimal. In a review of 13 fatality monitoring studies in three bird conservation regions in California and Nevada, a total of 669 fatalities were documented with 54.71% being songbirds when carcasses were adjusted for detection bias (Kosciuch et al. 2020). The identifiable species that had the highest percentage of bias-adjusted composition across all studies were mourning dove (12.92%), horned lark (11.93%), house finch (8.41%), and western meadowlark (7.78%). Kosciuch et al. (2020) stated that those species have populations that number in the millions in the bird conservation regions where the studies took place. However, carcasses of water associates and water obligates were primarily found at sites within 60 miles of the Salton Sea, and the representation of these bird groups in the fatality data decreased or disappeared at sites located away from the Salton Sea. The project is located over 160 miles from the Salton Sea in an area lacking water. Thus, under the pattern presented in Kosciuch et al. (2020) there is a low likelihood of water associate and water obligate bird fatalities at the project.

Factors that determine the risk of avian collisions with man-made structures include the size, height, and specific attributes of structures (guy wires and lighting/light attraction). Other factors include the siting in high-risk areas, frequency of inclement weather, type of development, and the species at potential risk. Such collisions can result in injury or mortality of avian species from electrocution, including in the case of power lines. Collisions with project facilities and equipment would be considered a potentially significant impact under CEQA. Direct and indirect impacts to migratory birds would be less than significant with the implementation of Mitigation Measure MM 4.4-1, MM 4.4-2, MM 4.4-4, and MM 4.4-5 general avoidance measures which includes biological monitoring, environmental awareness training, avoidance and protection measures, and preconstruction survey. Additionally, mitigation measures MM 4.4-10 and MM 4.4-11 would be implemented to require surveys for nesting birds and raptors and APLIC compliance respectively. Mitigation Measures MM 4.1-4 through MM 4.1-6 would also be implemented to ensure compliance with Kern County Dark Sky Ordinance, require minimization of glare and spectral highlighting, and the use of non-reflective materials as detailed in Chapter 4.2, *Aesthetics* these measures would further ensure impacts are reduced to less than significant.

Decommissioning

Upon decommissioning of the proposed project, the project site would be disturbed and have some areas of compacted soil (e.g., on roads, laydown yards, and structure foundations). The post-project condition of the project site as a result of project construction and operation would be different than pre-project conditions. If special-status species have recolonized the project site during operation, decommissioning could impact these species. Decommissioning would only directly impact areas that were previously disturbed during project construction; therefore, direct impacts to native habitats and special-status plants are expected to be less than significant. If special-status wildlife re-occupy the project site during operations, these species could be directly impacted by decommissioning, similar to the direct impacts described for construction. Wildlife with the potential to utilize partially-developed habitats and man-made structures include burrowing owls, kit fox, badger, bats, giant kangaroo rats, and nesting birds. Burrowing owls are known to use burrows under concrete slabs and along active road berms.

Indirect impacts to biological resources would be similar to those that would occur during construction, but would depend on the resources present adjacent to the project site at the time of decommissioning. Additional indirect impacts could include degradation of adjacent habitat if the site is colonized by invasive species or generates excessive runoff or dust due to a lack of vegetation. Depending on the species and biological resources present within and adjacent to the project site at the time of decommissioning, decommissioning activities could result in significant impacts to biological resources.

However, the same measures, Mitigation Measure MM 4.4-1 through MM 4.4-11, as applicable at the time, would be required upon the initiation of decommissioning activities. Implementation of these mitigation measures during the decommissioning period would reduce potentially significant impacts to special-status wildlife and plant species to less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line leading from the proposed Azalea Substation would be extended westerly to the pre-existing PG&E Arco Substation. The access road would be extended northerly from the project site to King Road. These areas are designated as grazing land and/or nonagricultural and natural vegetation. Use of this area for this element of the project would not conflict with any special-status species. Impacts would be less than significant in this regard.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to biological resources are considered less than significant because PG&E's standard best management practices and APMs include pre-construction biological resources inventory and data recovery, if necessary, and minimization or avoidance of impacts to any potentially significant biological resources that might be discovered by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and contacting a PG&E Biological Resources Specialist.

Mitigation Measures

Implementation Mitigation Measures MM 4.1-4 through MM 4.1-6, see Chapter 4.1, *Aesthetics*, would be required.

MM 4.4-1: Prior to the issuance of grading or building permits and prior to decommissioning, the project operator shall retain a Lead Biologist or approved Biological Monitor who meets the qualifications of an Authorized Biologist as defined by U.S. Fish and Wildlife Service to oversee compliance with protection measures for all listed and other special-status species. The Lead Biologist or approved Biological Monitor shall be on the project site during construction of perimeter fencing and grading activities throughout the construction phase, and as-needed during decommissioning. The Lead Biologist or approved Biological Monitor shall have the right to halt all activities that are in violation of the special-status species protection measures. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The Lead Biologist or approved Biological Monitor shall have in their possession a copy of all the compliance measures and appropriate Plans while work is being conducted on the project site.

MM 4.4-2: Prior to the issuance of grading or building permits and for the duration of construction and decommissioning activities, within one week of employment all new construction workers at the project site, laydown area and/or transmission routes shall attend an Environmental Awareness Training and Education Program, developed and presented by the Lead Biologist. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Environmental Awareness Training and Education Program.

The program shall include information on the life history of the BNLL, SJKF, giant kangaroo rat, raptors, American badger, as well as other wildlife and plant species that may be encountered during construction activities. The program shall also discuss the legal protection status of each species, the definition of "take" under the federal Endangered Species Act and California Endangered Species Act, measures the project operator is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of the federal Endangered Species Act or California Endangered Species Act.

- a. An acknowledgement form signed by each worker indicating that Environmental Awareness Training and Education Program has been completed would be kept on

record;

- b. A sticker shall be placed on hard hats indicating that the worker has completed the Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker;
- c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Environmental Awareness Training and Education Program and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Community Development Department;
- d. The construction crews and contractor(s) shall be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits; and
- e. An Operation and Maintenance-phase version of the WEAP will be maintained within the onsite O&M facility for review as may be necessary during the life of the project

MM 4.4-3:

A weed control plan shall be prepared to address the control of invasive weeds and plants. The weed control plan shall be in place prior to construction activities and shall be completed to the satisfaction of the County Planning Department. The plan shall include a risk assessment of the invasive weed and plant species currently known within the project site, procedures to control their spread on-site and to adjacent off-site areas, and procedures to minimize the introductions of new weed and plant species. The Weed Control Plan shall include preventive measures that would minimize the potential establishment of invasive weed and plant species during project implementation. To minimize the spread and establishment, tires and surfaces of all trucks and construction equipment shall be cleaned with water or high-pressure air prior to commencing work in off-site areas, and/or the use of rocks/grates at the entries to the project site shall be installed to physically dislodge seeds. Certified weed-free mulch shall be used when stabilizing areas of disturbed soils and on-site soils shall be used to the maximum extent practicable for fill. This measure also shall apply during decommissioning activities.

MM 4.4-4

During construction, operations and maintenance, and decommissioning the project operator shall implement the following general avoidance and protective measures:

- a. All proposed impact areas, including solar fields, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided.
- b. The project operator shall limit the areas of disturbance to the extent feasible. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.

- c. Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best management practices shall be employed to prevent erosion in accordance with the project's approved stormwater pollution prevention plan (SWPPP). All detected erosion shall be remedied within 2 days of discovery or as described in the SWPPP.
- d. To prevent inadvertent entrapment of San Joaquin kit foxes, American badgers, or other wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks. All holes and trenches, whether covered or not, shall be inspected for trapped wildlife at the start and end of each workday. Before such holes or trenches are filled, they shall be thoroughly inspected by the Lead Biologist or approved biological monitor for trapped wildlife. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is found trapped, all work in the vicinity of the animal shall cease immediately. If the animal is apparently uninjured, then the Lead Biologist shall directly supervise the provision of escape structures and/or trench modification to allow the trapped animal to escape safely. Work shall not resume in the vicinity of the animal, and it shall be allowed to leave the work area and project site on its own. If the listed animal is injured, then the Lead Biologist or approved biological monitor shall immediately contact the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife to identify an individual with the appropriate permit or authorization to handle listed species, who shall bring the animal to a pre-identified wildlife rehabilitation or veterinary facility for care.
- e. Burrowing owls, mammals, and nesting birds may use construction pipes, culverts, or similar structures for refuge or nesting. All towers shall be of the monopole variety and all hollow vertical structures, such as solar mount poles, or fencing poles, shall be capped immediately after installation to prevent bird entrapment. Therefore, all construction pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until the Lead Biologist has been consulted and the animal has either moved from the structure on its own accord (for listed species) or until the animal has been captured and relocated (for non-listed species) by the Lead Biologist. If the animal is a listed species, then work shall immediately halt in the vicinity, and the animal shall be allowed to move from the structure and the work area of its own accord. The Lead Biologist will direct work stoppages near the animal to allow it to freely move out of the pipe and away from the work area. Listed species shall not be handled or captured by anyone without the appropriate permit or authorization.
- f. No vehicle or equipment parked on the project site shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of wildlife. If present, the animal shall be left to move on its own.

- g. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated work areas shall be prohibited.
- h. A speed limit of 15 miles per hour shall be enforced within the limits of the proposed project.
- i. A long-term trash abatement program shall be established for construction, operations and maintenance, and decommissioning. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.
- j. Workers shall be prohibited from bringing pets and firearms to the project area and from feeding wildlife.
- k. Intentional killing or collection of any plant or wildlife species shall be prohibited.
- l. To enable kit foxes and other wildlife (e.g., American badger) to pass through the project site after construction, the security fence, and any permanent interior fencing shall be a wildlife friendly design that meets the goals of allowing wildlife to move freely through the project site during operation, leaving 4- to 7-inch openings or portals in the fence or the fence shall be raised 7 inches above the ground leaving a gap between the fence mesh and the ground. In the latter case the bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that passes under the fence.

MM 4.4-5

During construction and decommissioning, the Lead Biologist or approved biological monitor shall monitor all initial ground-disturbance activities and remain on-call throughout construction/decommissioning in the event a special-status species wanders into the project site.

Preconstruction surveys for special-status species shall be conducted within the project boundaries by the Lead Biologist or approved biological monitor within 14 days of the start of any vegetation clearing or grading activities. Methodology for preconstruction surveys shall be appropriate for each potentially occurring species-status species and shall follow U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife preconstruction survey guidelines where appropriate. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. The Lead Biologist may use a variety of approaches (including but not limited to monitoring, track plates, and direct observation) and evidence (including burrow characteristics and presence of sign such as scat and tracks) to determine burrow activity. If any evidence of occupation of the project site special-status species is observed, a buffer shall be established by a qualified biologist that results in sufficient avoidance, as described below.

Preconstruction surveys shall be conducted by a qualified biologist for the presence of American badger or San Joaquin kit fox dens within 14 days prior to commencement of construction activities. The surveys shall be conducted in the project site for American badger and San Joaquin kit fox. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14

days prior to that portion of the project site disturbed. If potential dens are observed and avoidance is feasible, the following buffer distances shall be established prior to construction activities:

San Joaquin kit fox or American badger potential den: 50 feet.

San Joaquin kit fox or American badger active den: 100 feet.

San Joaquin kit fox or American badger natal den: 500 feet.

If avoidance of the potential dens is not possible, the following measures are required to avoid potential adverse effects to the American badger and San Joaquin kit fox:

- a. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent American badgers or San Joaquin kit foxes from re-using them during construction.
- b. If the qualified biologist determines that potential dens may be active, an onsite passive relocation program shall be implemented. This program shall consist of excluding American badgers or San Joaquin kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for 7 days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that American badgers or San Joaquin kit foxes have stopped using the dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

During fencing and grading activities daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall activities conducted related to biological resources, including the Environmental Awareness Training and Education Program, clearance/pre-activity surveys, monitoring activities, and any observed special-status species, including injuries and fatalities. These monitoring reports shall be submitted to the Kern County Planning and Natural Resources Department and relevant resource agencies, as applicable, on a monthly basis along with copies of all survey reports.

MM 4.4-6:

Within 14 days prior to the commencement of any ground-disturbing activities, the project operator shall conduct preconstruction surveys for special-status and protected plant species within the project area, including but not limited to crownscale, Lost Hills crownscale and San Joaquin Bluecurls, San Joaquin woollythreads and California jewelflower. After the preconstruction survey determines the exact location of these species, if present, on the project site and the number of individuals or populations present, the project proponent/operator shall submit written documentation to the Kern County Planning and Natural Resources Department confirming implementation of the measures described below.

- a. The project proponent/operator shall work with a qualified biologist to determine presence of crownscale, Lost Hills crownscale and San Joaquin Bluecurls, San

Joaquin woollythreads and California jewelflower and identify all known locations of special-status plant species to establish “avoidance areas”. All special-status plants found within the project site shall be avoided by a buffer of 25 feet. Sturdy, highly visible, orange plastic construction fencing (or equivalent material verified by the authorized biologist) shall be installed around all locations of detected special-status plants to protect from impacts during the construction phase, until they can be relocated. The fence shall be securely staked and installed in a durable manner that would be reasonably expected to withstand wind and weather events and last at least through the construction period. Fencing shall be removed upon completion of the project construction.

- b. Any crownscale, Lost Hills crownscale, San Joaquin Bluecurls, San Joaquin woollythreads or California jewelflower onsite individuals or populations that cannot feasibly be avoided in final project design shall have seed collected prior to construction for sowing into suitable onsite habitat or in nearby suitable offsite habitat covered with a conservation easement. A seed harvesting and storage plan including a planting plan shall be prepared and approved by the County, prior to ground disturbance of these areas.
- c. Temporary ground disturbance associated with the gen-tie lines or collector lines shall be recontoured to natural grade (if the grade was modified during the temporary disturbance activity), and revegetated with an application of a native seed mix prior to or during seasonal rains to promote passive restoration of the area to pre-project conditions. However, if invasive plant species were present, these species would not be restored. An area subjected to temporary ground disturbance means any area that is disturbed but will not be subjected to further disturbance as part of the project. This does not include areas already designated as urban/developed. Prior to seeding temporary ground disturbance areas, the qualified biologist will review the seeding palette to ensure that no seeding of invasive plant species, as identified in the most recent version of the California Invasive Plant Inventory for the region, will occur.

MM 4.4-7:

A qualified wildlife biologist shall conduct preconstruction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows no fewer than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading, tilling). The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls. As each burrow is investigated, surveying biologists shall also look for signs of American badger and San Joaquin kit fox. Copies of the survey results shall be submitted to CDFW and the Kern County Planning and Natural Resources Department.

If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within a buffer of no fewer than 100 meters (330 feet) from an active burrow during the breeding season (i.e., February 1 to August 31), unless otherwise authorized by CDFW. During the non-breeding (winter) season (i.e., September 1 to January 31),

ground-disturbing work can proceed as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.

If burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31) where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation.

If passive relocation is required, a qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and a Mitigation Land Management Plan in, accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation, for review by CDFW prior to passive relocation activities. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation. At a minimum, the following recommendations shall be implemented:

- a. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions including decompacting soil and revegetating.
- b. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows and burrowing owl impacted are replaced based on a site-specific analysis and shall include permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals.
- c. Permanently protect mitigation land through a conservation easement, deed restriction, or similar mechanism deeded to a nonprofit conservation organization or public agency with a conservation mission. If the project is located within the service area of a CDFW-approved burrowing owl conservation bank, the project operator may purchase available burrowing owl conservation bank credits. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the proposed project if the compensatory habitat is deemed suitable to support the species.

MM 4.4-8:

A preconstruction survey for BNLL and antelope squirrel in compliance with agency recommendations in accordance with USFWS and/or CDFW protocols shall be conducted and used to determine if there are suitable burrows for these species on the project site. The survey shall identify burrows suitable for BNLL or antelope squirrels. An agency-approved disturbance buffer shall be placed around all identified small burrows with potential to support BNLL or antelope squirrels. Avoidance of burrows and associated buffer areas shall be implemented. If BNLL or antelope squirrels are identified during the focused surveys, USFWS and CDFW shall be consulted to obtain the necessary permit authorizations before proceeding. If burrow avoidance is not

possible within the project site, a Management Plan for the appropriate species will be prepared in consultation with the agencies.

MM 4.4-9:

Protocol level surveys for the BNLL shall be conducted by a qualified biologist at the project site from April to July, in suitable habitat that will be disturbed by construction, to determine the potential for occupancy by BNLL. Surveys may be conducted in areas of disturbance and needed buffers as work progresses or in stages as needed during the construction phase. If surveys indicate that BNLL and appropriate burrow habitat are absent, the construction area(s) can be fenced using materials and installing fencing in compliance with agency specifications to prevent potential future occupancy of BNLL..

If BNLL are found within the survey areas, measures to protect the species shall include appropriate signage, monitoring by approved qualified biologists and other specific protection measures developed in compliance with agency guidelines. If burrows are found to be occupied, measures for avoidance and minimization of impact to BNLL shall be written in compliance with recommendations provided during agency consultations and shall contain project specific details. Project actions in areas where BNLL are located shall be restricted to the species active period (April to early November) to ensure that no aestivating BNLL in burrows are impacted while in their burrows. In conjunction with CDFW or other involved agencies, sensitive areas shall be established and protected with appropriate signage. During the active season when blunt-nosed leopard lizards are moving above-ground (April to early November), the following measures will be implemented in areas where blunt-nosed leopard lizards or signs of blunt-nosed leopard lizards have been observed:

- a. Establishment of No-Work Buffers. The project biologist will establish, monitor, and maintain 50-foot no-work buffers around burrows and egg clutch sites identified during surveys. The 50-foot no-work buffers will be established around burrows in a manner that allows for a connection between the burrow site and the suitable natural habitat adjacent to the Construction Footprint so that blunt-nosed leopard lizards and/or hatchlings may leave the area after eggs have hatched. Construction activities will not occur within the 50-foot no-work buffers until such time as the eggs have hatched and blunt-nosed leopard lizards have left the area.
- b. Fencing of Work Areas. Prior to installing wildlife exclusion fence (WEF), the project biologist will confirm that no blunt-nosed leopard lizard are present within a Work Area by conducting focused blunt-nosed leopard lizard observational surveys for 12 days over the course of a 30 to 60-day period. At least one survey session will occur over 4 consecutive days. These observational surveys may be paired with scent detection dog surveys for blunt-nosed leopard lizard scat.
 - i. Within 3 days of completing these surveys with negative results, WEF will be installed in a configuration that accounts for burrow locations and enables blunt-nosed leopard lizards to leave the Work Area. The following day, the project biologist will conduct an observational survey. If no blunt-nosed leopard lizards are observed, the project biologist will install additional WEF to further enclose the Work Area. This Work Area will be monitored daily while the WEF is in place.

- ii. If blunt-nosed leopard lizards are observed prior to installing the last of the WEF, the project biologist will continue observational surveys until the lizard is observed leaving the Work Area or until 30 days elapse with no blunt-nosed leopard lizards observations within the Work Area.

A qualified biological monitor shall be present to ensure activities are compliant with protection measures. Ground disturbance shall be prohibited in sensitive areas, and biological monitors shall conduct regular inspections.

MM 4.4-10: If construction is scheduled to commence during the non-nesting season (i.e., September 1 to January 31), no preconstruction surveys or additional measures are required. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site for construction activities that are initiated during the breeding season (i.e., February 1 to August 31). The raptor survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 0.5-mile buffer around the project site. Swainson's hawk nest survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 5-mile buffer around the project site and follow the 2010 Swainson's hawk protocol surveys (CEC and CDFW 2010). Surveys shall be conducted no more than 14 days prior to construction activities. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur shortly before a portion of the project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable no-disturbance buffer (e.g., 200–300 feet for common raptors; 0.5 mile for Swainson's hawk; 30–50 feet for passerine species) shall be established around active nests until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). For non-listed species, encroachment into the avoidance buffer may occur at the discretion of a qualified biologist; however, for State-listed species, consultation with CDFW shall occur prior to encroachment into the aforementioned buffers.

MM 4.4-11: The project proponent/operator shall install power lines in conformance with Avian Power Line Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), and for collision-reducing techniques as outlined in Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), or any superseding document issued by APLIC.

MM 4.4-12 Exclusionary fencing, staking or other marking shall be installed prior to grading activities and remain in place for the duration of construction to ensure limiting disturbance to only that which is necessary.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-12 and MM 4.1-4 through MM 4.1-6 from Chapter 4.1, *Aesthetics*, impacts would be less than significant.

Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.

Surveys of the BSA identified three plant communities present: CAG, RSP, and disturbed/developed. All three plant communities were dominated by non-native plant species. The CAG community occurs on moderately disturbed grazing lands within the BSA. The CDFW rapid assessment did not recognize an existing alliance or semi-natural stand. Based on species cover, the designation of *Hordeum murinum* ssp. *glaucum* Semi-Natural Stand would best describe the CAG community.

No sensitive plant communities were identified within the BSA. The construction and operations of the project would not result in direct or indirect impacts to sensitive plant communities within the project area. Most of the permanent impacts would occur in the RSP community (**Table 4.4-4: Impact Acreages by Plant Community**), which is strongly dominated by non-native grasses and has been impacted by routine grazing, discing, and the spray field since at least 2010. Impact acreages by project component is shown in **Table 4.4-5: Impact Acreages to Plant Communities by Project Component**. Permanent impacts to these plant communities may not require mitigation. Impacts to plant communities would not be considered significant under CEQA since no sensitive communities were identified.

The proposed project would impact the listed communities through installation of fencing, the solar facility, access roads, BESS, the project substation, and gen-tie lines. **Table 4.4-4**, and **Table 4.4-5**, provide the impact areas in tabular format.

TABLE 4.4-4: IMPACT ACREAGES BY PLANT COMMUNITY

Plant Community	Total Acres Impacted
Disturbed/Developed	10
California Annual Grassland (CAG)	11.1
Rangeland/Spray Field (RSP)	310.16

Source: Appendix E, Biological Resources Technical Report

TABLE 4.4-5: IMPACT ACREAGES TO PLANT COMMUNITIES BY PROJECT COMPONENT

Project Component	Plant Community	Acreage of Impact
Fencing	Rangeland/Spray Field	6.31
	Disturbed/Developed	0.11
	Sub Total:	6.42
Solar Facility	Rangeland/Spray Field	298.7
	Sub Total	298.27
Access Road	Disturbed/Developed	1.95
	California Annual Grassland	3.07
	Rangeland/Spray Field	0.00
	Sub Total:	5.02
Battery Storage	Rangeland/Spray Field	5.01
	Sub Total:	5.01
Project Substation	Rangeland/Spray Field	0.55
	Sub Total:	0.55

Project Component	Plant Community	Acreage of Impact
Gen—Tie	Disturbed/Developed	1.33
	California Annual Grassland	7.66
	Rangeland/Spray Field	0.02
	Sub Total:	9.01
TOTAL		324.28

Source: Appendix E, Biological Resources Technical Report

Recent cases from the US Supreme Court (*Rapapost v. United State*, and *Carabell v. United States*), addressed the scope of the USACE’s jurisdiction over waters of the United States. The guidance distinguishes between traditional navigable water (TNW), relatively permanent waters (RPW), and non-relatively permanent waters (non-RPW). Factors that are used to determine classification can include adjacent wetlands, ecology, hydrology, and the influence of the water on the “chemical, physical, and biological integrity of downstream traditional navigable waters.” These features are used to help determine nexus and the applicability of USACE regulations and jurisdiction regarding the use and dredge or fill within these areas. Wetland and/or channel features not subject to the USACE jurisdiction, however, may be subject to the CDFW and/or the Regional Water Quality Control Board (RWQCB).

Based on an evaluation of the existing ditches and basin on the project site neither the detention basin or drainages appear to meet jurisdictional criteria. In addition, there are no sensitive natural communities or riparian habitat on the project site. Therefore, no impacts to sensitive natural communities or riparian habitat would result from the implementation of the proposed project.

The 1.2 acre detention basin is a manmade depression in the uplands. Flows to the basin are from a series of canals and other basins within adjacent agricultural areas with water derived from the California aqueduct approximately 1.3 miles to the east. The detention basin discharges by sprinkler system into uplands within the project site and the capacity of the detention basin to carry or reduce pollutants, flood water, nutrients, or organic carbon is speculative and insubstantial relative to the nearest TNW. The detention basin does not have a sufficient volume, duration, or frequency of flow to have a significant nexus to the chemical, physical, or biological integrity of the nearest TNW based on the distance of the project site from the navigable segment of the San Joaquin River, the negligible contribution of the watershed, and the lack of a relatively permanent hydrologic connection.

Drainages A and B comprise 0.06 acres in the BSA, do not appear to meet the “significance nexus” criteria for federal jurisdiction under the CWA. All drainages are ephemeral and ultimately discharge into uplands as sheet flow. None of the drainages have a sufficient volume, duration, or frequency of flow to have a significant nexus to the chemical, physical, or biological integrity of the nearest TNW. Additionally, based on the distance of the project site from the navigable segment of the San Joaquin River, the negligible contribution of the watershed there is a lack of a relatively permanent hydrologic connection.

To further ensure impacts to the drainages would be less than significant, Mitigation Measure MM 4.10-1, see Chapter 4.10, *Hydrology and Water Quality*, requires the applicant to devise and submit a site-specific SWPPP to minimize the discharge of wastewater during construction. The SWPPP would include steps for implementation of best management practices (BMPs) aimed at sediment control and erosion control, and could include soil stabilization, silt fencing, straw bale and temporary catch basins. These BMPs would be implemented during construction of the proposed project as a condition of required permits, therefore minimizing soil erosion in any areas that would be considered jurisdictional waters to the extent feasible. Impacts would be considered less than significant.

The access road is to the north of the project site and approximately 2.2 miles. The access road could have potential impacts to sensitive plant species and California Annual Grasslands (CAG), mitigation measure MM 4.4-1 and MM 4.4-6 would reduce these impacts to a less than significant level.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The interconnection to Arco Substation and access road areas have been included in the BSA and analyzed within the Biological Technical Report. As discussed above the access road could have potential impacts to sensitive plant species and California Annual Grasslands (CAG), mitigation measures MM 4.4-1 through MM 4.4-6 would be implemented to reduce impacts to a less than significant level.

The gen-tie line leading from the Azalea Project Substation would be extended westerly to the pre-existing Arco Substation. This area consists of CAG, RSP and disturbed/developed plant communities. All three communities were dominated by non-native plant species. Use of this area for this element of the project would not have substantial adverse effects on any riparian habitat or other sensitive natural community. Impacts would be less than significant in this regard.

The construction and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to biological resources are considered less than significant because PG&E's standard best management practices and APMs include pre-construction biological resources inventory and data recovery, if necessary, and minimization or avoidance of impacts to any potentially significant biological resources that might be discovered by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and contacting a PG&E Biological Resources Specialist.

Mitigation Measures

Implementation of Mitigation Measures 4.4-1 through MM 4.4-6 and MM 4.10-1 (See Section 4.10, *Hydrology and Water Quality*) would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-1 through 4.4-6, and MM 4.10-1, from Section 4.10, *Hydrology and Water Quality*, impacts would be less than significant.

Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.4-3: The project would 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 *Biological Technical Report* (Appendix E) found that there are no traditional navigable waters (TNW) or wetlands adjacent to TNWs occurring in the BSA. The nearest TNW is the San Joaquin River, approximately 60 miles northeast of the project site. Additionally, the Biological technical Report found no wetlands were present to be delineated during the September 2020 or March 2021 surveys. The USACE Arid West Region form (Version 2.0) was used at depressions adjacent to Drainage B and at a small terrace along the access road. None of the data points met USACE wetland criteria using the three parameter test (See Appendix E). The data points were cross referenced with the SWRCB wetland definition (See Appendix E) and failed to meet the three (3) criteria set forth (SWRCB 2019). Thus, no wetlands considered waters of the state were observed during the surveys.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line leading from the Azalea Project Substation would be extended westerly to the pre-existing Arco Substation. There were no identified wetlands considered waters of the state impacted by the proposed connection to PG&E Arco Substation or access road. Impacts would be less than significant in this regard.

The construction and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to biological resources are considered less than significant because PG&E's standard best management practices and APMs include pre-construction biological resources inventory and data recovery, if necessary, and minimization or avoidance of impacts to any potentially significant biological resources that might be discovered by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and contacting a PG&E Biological Resources Specialist.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.4-4: The project would 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.

Sensitive wildlife was observed and documented within the BSA. Sensitive species that were observed may utilize the project site and surrounding areas as a wildlife corridor between lands further to the north and west. While the habitat within the project site and surrounding area is marginal for use by wildlife due to the land use conditions including past uses including agriculture, discing, and current grazing activities, it would likely serve to facilitate movements and foraging activities for some wildlife species. Local wildlife species with a high potential to occur could move through the study area while foraging. Migratory wildlife could use the project site and surrounding areas as a stopover during the migration seasons and some sensitive wildlife would use the site to move to and from other nearby areas.

Development of the proposed project including grading, construction of structures, and installation of fencing, and solar panel, would have the potential to interfere with local movement of wildlife within and adjacent to the project site. The project site, however, is not located within a known wildlife migratory corridor or a wildlife connectivity area connecting large open space areas in the region or locally, as mapped by the California Essential Habitat Connectivity Project (CEHCP) (Caltrans, CDFW, 2010). Lastly, lighting from the project site could potentially affect local movement of nocturnal wildlife by deterring them from illuminated areas around the project site. However, all lighting installed as a part of the proposed project would comply with the Kern County Dark Skies Ordinance and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties as discussed in Mitigation Measures MM 4.1-4 through MM 4.1-6. Thus, in consideration of the diminished habitat quality and the fact the project is not within the CEHCP area, implementation of the project would not significantly impact local or regional wildlife movement. To further reduce impacts, Mitigation Measure MM 4.4-13 would be incorporated to the project, impacts would be further reduced to less than significant.

Interconnection to Arco Substation and Access Road

The gen-tie line leading from the Azalea Project Substation would be extended westerly to the pre-existing Arco Substation. Implementation of the gen-tie line and access road could interfere with the movement of native wildlife species. However, with the implementation of Mitigation Measures MM 4.4-13, impacts would be reduced to a less than significant level.

The construction and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to biological resources are considered less than significant because PG&E's standard best management practices and APMs include pre-construction biological resources inventory and data recovery, if necessary, and minimization or avoidance of impacts to any potentially significant biological resources that might be discovered by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and contacting a PG&E Biological Resources Specialist.

Mitigation Measures

Implement Mitigation Measures MM 4.1-4 through MM 4.1-6 from Section 4.1, *Aesthetics*

MM 4.4-13: Movement Corridors shall be established and managed for the benefit of sensitive species movement in compliance with agency recommendations. A qualified biologist shall be involved with the design or provide approval of the plan to ensure areas to ensure wildlife movement exist within and around the project site. The use of movement corridors shall be a part of the operations plan and be ensured for the duration and perpetuity of the project.

Level of Significance after Mitigation

With the Implementation of Mitigation Measures Mitigation Measures MM 4.1-4 through MM 4.1-6 from Section 4.1, *Aesthetics* and MM 4.4-13, impacts would be less than significant.

Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The project site is disturbed and has a history of agricultural activities and is actively grazed. The proposed areas of disturbance do not contain any trees. As currently designed, the proposed project is considered consistent with the Land Use, Open Space, and Conservation Element of the Kern County General Plan. The project would implement mitigation measures to reduce potential project-related impacts to sensitive biological resources including special-status species and jurisdictional features.. With the implementation of this mitigation measure, impacts to any local policies or ordinances would be less than significant and no mitigation is required.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line leading from the Azalea Project Substation would be extended westerly to the pre-existing Arco Substation. Implementation of the gen-tie line and access road would not conflict with local policies or ordinances protecting biological resources. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to biological resources are considered less than significant because PG&E's standard best management practices and APMs include pre-construction biological resources inventory and data recovery, if necessary, and minimization or avoidance of impacts to any potentially significant biological resources that might be discovered by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and contacting a PG&E Biological Resources Specialist.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.4-6: The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

The project would not conflict with any other adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan. No impact would occur.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the gen tie line and access road associated with the solar facility would not conflict with any adopted Habitat Conservation Plan, Natural Communities Conservation Plan or other local, regional or State plan. Impacts would be less than significant in this regard.

The construction and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to biological resources are considered less than significant because PG&E's standard best management practices and APMs include pre-construction biological resources inventory and data recovery, if necessary, and minimization or avoidance of impacts to any potentially significant biological resources that might be discovered by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and contacting a PG&E Biological Resources Specialist.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. As described above, the project-specific impacts of the project would be less than significant with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, MM 4.1-4 through MM 4.1-6, See Chapter 4.1, *Aesthetics*, and MM 4.10-1, see Chapter 4.10, *Hydrology and Water Quality*.

As large-scale energy projects and urbanization pressures increase within Kern County, impacts to biological resources within the region are expanding on a cumulative level. As described in **Table 3-3: Cumulative Projects List**, in Chapter 3, *Project Description*, of this EIR, other projects with similar species effects have been completed within the Valley Region including the Challan Solar Project, Lost Hills Solar Project, and the Pelicans Jaw Solar Project which are located in the vicinity of project site. In general, bioregions are defined through physical and environmental features, including watershed boundaries and soil and terrain characteristics. Areas to the west within the foothills and higher elevation of the Coast Range, as well as other bioregion and are separated from the project site topographic features and other natural geography. In addition, built features such as Interstate-5 (I-5) and the California Aqueduct and other major roadways and water conveyances acts as a barrier to wildlife movement.

As described above, there are a number of special-status species, both plants and wildlife, that currently utilize the project site and surrounding vicinity. Implementation of the project, along with related projects, have the potential to impact transient wildlife species, including BNLL, San Joaquin coachwhip, prairie falcon, burrowing owls, Swainson's hawk, loggerhead shrike, California horned lark, other raptors, migratory birds, American badger, San Joaquin kit fox, giant kangaroo rat, and Nelson's antelope squirrel. The project site contains habitat that support plants, insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species.

Given the number of present and reasonably foreseeable future development projects in the Kern County valley region, the proposed project, when combined with other projects, would contribute to cumulative loss of habitat for special-status species. Implementation of Mitigation Measures would reduce impacts to habitat to less than significant for the proposed project. However, the proposed project, when combined with other related development projects proposed throughout the County, would cumulatively impact habitat for special-status species. Thus, cumulative impacts would be significant and unavoidable.

The project has the potential to contribute to cumulative impacts to special-status plant species, including the California Jewell flower, San Joaquin Bluecurls, and San Joaquin Wollooythreads, however, after implementation of MM 4.4-6, which includes pre-construction surveys, avoidance, and translocation/salvage measures developed as part of a mitigation plan it is anticipated the project's contribution of impacts to special-status plant species would be less than significant.

Lastly, when considered in combination with other existing and reasonably foreseeable projects in the surrounding flat, open portions of the Valley Region south from the Tehachapi foothills, west to the coast range, east to the Sierra Nevada, and north beyond the Kern County boundary, the proposed project has the potential to further reduce local wildlife movement. However, wildlife movement within the project site and area is likely diffuse, and flat, developed lands would remain available to facilitate wildlife movement within the valley. Therefore, impacts concerning wildlife movement would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

Impacts associated with construction of the gen tie line and access road are expected to encompass a relatively small footprint and minimal ground disturbance. As discussed above the access road could have potential impacts to sensitive plant species and California Annual Grasslands (CAG), Mitigation Measures MM 4.4-1 through MM 4.4-6 would be implemented to reduce impacts to a less than significant level. Cumulative impacts associated with the Arco Substation connection and access road would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to biological resources are considered less than significant because PG&E's standard best management practices and APMs include pre-construction biological resources inventory and data recovery, if necessary, and minimization or avoidance of impacts to any potentially significant biological resources that might be discovered by implementing standard protocols that include ceasing all work within 50 feet of the discovery, protecting the discovery from further impacts, and contacting a PG&E Biological Resources Specialist.

Mitigation Measures

Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, MM 4.1-4 through MM 4.1-6, see Chapter 4.1, *Aesthetics*, and MM 4.10-1, see Chapter 4.10, *Hydrology and Water Quality*, would be required.

Level of Significance after Mitigation

With the implementation of Mitigation Measures 4.4-1 through 4.4-13, cumulative impacts would remain significant and unavoidable to transient wildlife species, BNLL, San Joaquin coachwhip, prairie falcon, burrowing owls, Swainson's hawk, loggerhead shrike, California horned lark, other raptors, migratory birds, American badger, San Joaquin kit fox, giant kangaroo rat, and Nelson's antelope squirrel.

Cumulative impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Section 4.5

Cultural Resources

4.5.1 Introduction

This section of the EIR provides contextual background information on cultural resources in the project site, including the site's prehistoric, ethnographic, and historical settings of the region. This section also summarizes the results of a Phase 1 Archaeological Survey Addendum Report, including background research. The project's potential impacts on tribal cultural resources, are addressed in Section 4.16, *Tribal Cultural Resources*.

This section is based on two technical reports prepared by Surf to Snow Environmental Resource Management, Inc. (S2S) and Native American consultation conducted by the County for purposes of compliance with CEQA requirements prompted by Assembly Bill (AB) 52. The *Phase I Archaeological Survey Addendum Report* (S2S, 2021) details the results of a cultural resources records search, field survey for the project, and the *Paleontological Inventory Report* (S2S, 2021), was used as it presents the results of a geologic map review, a literature search, an institutional record search, and a field study used for background information in this discussion. These reports are provided in Appendix F and H-2 of this EIR.

More specifically, the archaeological resources study was conducted in compliance with California Public Resources Code (PRC) Section 5024.1 and CEQA to identify archaeological, historic built architectural, and other cultural resources in the project area. Due to the confidential nature of the location of cultural resources, information regarding locations of cultural resources has been removed from these reports and is not included in the Appendix. Additional information related to Paleontological Resources also is provided in *Section 4.7, Geology and Soils*.

Cultural Resource Terminology

For the purposes of CEQA, "cultural resources" generally refer to prehistoric and historical archaeological sites, isolates, and the built environment. Cultural resources can also include areas determined to be important to Native Americans. Below are definitions of key cultural resources terms used in this section.

- **Alluvium:** a fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in river beds, and in estuaries.
- **Archaeological site:** A site is defined as the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains. Archaeological remains usually take the form of artifacts (e.g., fragments of tools, vestiges of utilitarian, or nonutilitarian objects), features (e.g., remnants of walls, cooking hearths, or midden deposits), and ecological evidence (e.g., pollen remaining from plants that were in the area when the activities occurred). Prehistoric archaeological sites generally represent the material remains of Native American groups and their activities dating to the period before European contact. In some cases, prehistoric sites may contain evidence of trade contact with Europeans. Ethnohistoric archaeological sites are defined as Native American settlements occupied after the arrival of European settlers in California. Historic archaeological sites reflect activities during the Historic period.

- **Artifact:** An object that has been made, modified, or used by a human being.
- **Cultural resource:** Cultural resources are expressions of human culture and history in the physical environment, and may include archaeological sites, buildings, structures, objects, districts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains, but also may include areas where significant human events occurred, even though evidence of the events no longer remains. Cultural resources also include places that are considered to be of traditional cultural or religious importance to social or cultural groups.
- **Ethnographic:** Relating to the study of human cultures. “Ethnographic resources” represent the heritage resource of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.
- **Historic period:** The period that begins with the arrival of the first nonnative population and thus varies by area. In 1772, Commander Don Pedro Fages was the first European to enter Kern County, initiating the historic period in the project study area.
- **Historical resource:** This term is used for the purposes of CEQA and is defined in the CEQA *Guidelines* (Section 15064.5) as: (1) a resource listed in, or determined to be eligible for listing in the California Register of Historical Resources (California Register); (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); and (3) any object, building, structure, site, area, place, record, or manuscript which 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 by the lead agency, provided the lead agency’s determination is supported by substantial evidence in light of the whole record.
- **Holocene:** Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.
- **Isolate:** An isolated artifact or small group of artifacts that appear to reflect a single event or activity. Because isolates may lack identifiable context, and may not have the potential to add important information about a region, culture, or person, they are generally not considered under CEQA to be historical or unique archaeological resources (PRC Section 21083.2 and CEQA *Guidelines* Section 15064.5).
- **Lithic:** Of or pertaining to stone. Specifically, in archaeology lithic artifacts are chipped or flaked stone tools, and the stone debris resulting from their manufacture.
- **Pleistocene (Ice Age):** An epoch in the Quaternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth’s land.
- **Prehistoric period:** The era prior to 1772. The later part of the prehistoric period is also referred to as the protohistoric period in some areas, which marks a transitional period during which native

populations began to be influenced by European presence resulting in gradual changes to their lifeways.

- **Quaternary age:** The most recent of the three periods of the Cenozoic Era in the geologic time scale of the ICS. It follows the Tertiary Period, spanning 2.588 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: The Pleistocene and the Holocene Epochs.
- **Stratigraphy:** The natural and cultural layers of soil that make up an archaeological deposit, and the order in which they were deposited relative to other layers.
- **Tribal cultural resource:** These are defined in AB 52 as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources (PRC § 21074 (a)(1)).
- **Unique archaeological resource:** This term is used for the purposes of CEQA and is defined in PRC Section 21083.2(g) 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 either contains information needed to answer important scientific research questions and that there is demonstrable public interest in that information; has a special and particular quality such as being the oldest of its type or the best available example of its type; or, is directly associated with a scientifically recognized important prehistoric or historic event or person.

4.5.2 Environmental Setting

The project site generally lies within the Valley region of Kern County. The project site is mapped on the Antelope Plain (2018) United States Geological Survey (USGS) 7.5-minute topographic quadrangle in an unincorporated area of northwestern Kern County. The site is approximately 2.5 miles northwest of the intersection of Twisselman Road and King Road, and directly south of the Kern County/Kings County boundary line. The project is situated on undeveloped lands traditionally used for agriculture but that have been used for grazing for the last ten years. The project site is surrounded by areas other largely undeveloped land dominated by grazing and agricultural uses.

Ethno Graphic Setting

The project area lies within the territory of the Southern Valley Yokuts. At the time of initial European contact, the Yokuts comprised 40 to 60 named subgroups, or tribelets, that inhabited the San Joaquin Valley and the foothills of the western slope of the Sierra Nevada (Arkush 1993:620). Ethnographers have traditionally divided the Yokut culture into Northern Valley, Southern Valley, and Foothills divisions, based on geography.

The territory of the Southern Valley Yokuts included Tulare, Buena Vista, and Kern Lakes; their connecting sloughs; and the lower portion of the Kings, Kaweah, Tule, and Kern Rivers. The southern San Joaquin Valley received only 5 to 10 inches of rain annually, but drainages on the valley’s eastern flank were well watered by snowmelt from the Sierra Nevada Mountains, which created extensive swamps and marshlands that provided an enormous variety and abundance of wildlife and aquatic flora. This abundance of

subsistence resources allowed the Yokuts to enjoy greater material wealth and sedentary lifestyle than most other ethnographically documented groups.

The Southern Valley Yokuts' diet was diverse and relied on fishing, hunting waterfowl, and collecting shellfish, roots, and seeds. Most of their region was treeless except for the cottonwoods, sycamores, and willows that lined the river channels and sloughs. Oaks did not extend very far onto the valley floor and, therefore, acorns were not readily available. Acorns and pine nuts, however, were obtained through trade with neighboring groups. Southern Valley Yokuts pursued small game but rarely ventured into the open country to capture antelope or elk. However, they did opportunistically hunt larger mammals when they came to the lakes and sloughs for water. Arkush (1993) believes that the valley's abundant resources allowed some Yokut groups to intermittently acquire food surpluses, which allowed them to develop simple surplus economies without the benefit of domesticated plants or animals.

The Yokuts were extremely active traders of asphaltum, shells, obsidian, animal skins, and baskets, and there is evidence that some Yokut individuals were professional traders (Arkush 1993:623). Marine shells were secured via trade with coastal peoples and used for currency and personal adornment. This regular contact with neighboring and distant groups, along with relative sedentism, craft specialization, and a surplus economy, allowed the Yokuts political and social organization to become more complex than most other California native groups.

Single-family residences were constructed of stick frames that were covered with mats made from tule reeds. Some groups, using the same materials, built distinctive long, steep-roofed communal houses that could shelter 10 or more families. Additionally, each village had a communally-owned sweathouse. The men did their daily sweating and occasionally slept there.

Tule, which was abundant along the river channels, provided the basis for their highest technological skill—basket weaving. Yokut baskets varied in shape and use and included bowl-shaped cooking containers, conical burden baskets, flat winnowing trays, seed beaters, and a unique-necked water bottle. Canoe-shaped rafts that could hold six people and their belongings were constructed of dried tules, which enabled efficient travel and trade along waterways. In contrast, wood and stone crafts were relatively undistinguished, and finished items made from these materials were often obtained by trade.

The Yokuts were divided into self-governing local groups or tribelets, each with a distinct dialect and territory and averaging about 300 members in size (Kroeber 1925:474). In most cases, each tribelet occupied several settlements, one of which was a relatively large, dominant village led by a central chief. Captains or sub-chiefs often ruled the smaller satellite settlements. These offices were usually attainable only through patrilineal inheritance (Arkush 1993:622; Gayton 1945:417). Generally, Yokut groups were peaceful, but occasional warfare did break out. Fighting occurred on a small scale and very little ritual was attached to warfare.

The initial contact between the Yokuts and the Spaniards occurred in the fall of 1772, when a small military party led by Captain Pedro Fages crossed the Tejon Pass into the southern San Joaquin Valley in search of Spanish deserters. At this time, Fages visited the village of Tulamniu, on the northwest shore of the Buena Vista Lake (Arkush 1993:623). Over the next several decades, only a small number of Southern Valley Yokuts came under the control of the coastal Franciscan missionaries; however, significant impacts to their culture resulted from infiltration of natives who had escaped from the missions. Foreign practices introduced by these runaways contributed to the erosion of traditional Yokut lifeways. Complete cultural breakdown and near-total disappearance of native peoples from the San Joaquin Valley came with the annexation of California by the United States and the resulting rapid increase in Euro-American

populations. Because of the early and rapid decimation of the Southern Valley Yokuts, and the rapid collapse of their culture, there is relatively little published literature that describes them, and ethnographic descriptions obtained from aged informants is incomplete. However, it is clear that some Yokuts remained in the area, as evidenced by limited information gleaned from multiple sources.

Today, some Southern Valley Yokuts continue to reside in the area, with reservations established in 1921 at Santa Rosa Rancheria and Table Mountain Rancheria in 1916. The Carrizo Plain contains sites of particular religious significance for the Southern Valley Yokuts and tribe members continue to visit the rock art sites located within the Carrizo Plain National Monument.

Prehistoric Setting

Despite decades of archaeological research in the San Joaquin Valley, the prehistory of the region remains poorly understood which is due to many of the sites thought to have been destroyed by agricultural development and erosion. Nevertheless, archaeological assemblages within the San Joaquin Valley show significant variation, reflecting influences from both the Sacramento-San Joaquin Delta area and southern California. The following provides a brief description of the various prehistoric periods that occurred within the region.

Paleo-Indian (10,000-8000 B.C.)

Human occupation in central California dates to at least the terminal Pleistocene, or almost 12,000 years ago, and some of the most substantial evidence from this period has been found in the southern portion of the San Joaquin Valley. The primary time marker for sites dating to this period is the fluted and basally thinned projectile point, which appears to be limited to late Pleistocene and very early Holocene sites. Near the project area, fluted points have been collected from surface sites on the Pleistocene shores of Buena Vista, Kern, and Tulare Lakes. Most Paleoindian period sites in California represent the remains of single-use encampments, and their assemblage of temporally diagnostic artifacts is generally limited to only one or two fluted points.

Lower Archaic (ca. 8550-5550 B.C.)

Similar to the Paleoindian period, occupation of central California and the San Joaquin Valley during the Lower Archaic is largely evidenced by isolated finds. The Lower Archaic period is marked by large, heavy stemmed points, which has led many researchers to believe that subsistence during this period centered on hunting artiodactyls. Rosenthal et al. (2007) demonstrate that the absence of plant processing equipment in valley assemblages during this period is not reflected in the adjoining Sierra Nevada and Coast Range foothills, where sites have been found containing abundant milling equipment. These differences among assemblages at different elevations may point to the beginnings of a seasonal round, where populations occupied the lower elevations of the valley in the winter months and shifted to higher elevations to exploit plant resources during the spring and summer. Alternatively, these differences may reflect the initial manifestations of the valley floor and foothill adaptations that would become distinct cultural traditions during the Middle Archaic.

Middle Archaic (ca. 5550 B.C. – A.D. 550)

Variety in diet composition gradually increased among Middle Archaic populations. Initially, this diversification took the form of an increased emphasis on seed processing along with continued hunting and some fishing. Later, a shift to a greater reliance on acorns and pine nuts as a dietary staple is evidenced by an increase in bedrock mortars and pestles, which are better suited to crushing and grinding acorns, along with a decrease in handstones and metates, which were primarily used for grinding wild grass grains and seeds (Moratto 1984:209–210). Cobble mortars also saw increased use during this period, as did wooden and hopper mortars. The frequent occurrence of dart points in Middle Archaic assemblages demonstrates that hunting remained an important dietary component.

Upper Archaic (550 B.C. – A.D. 1100)

The Upper Archaic period is evidenced by several changes in subsistence, foraging, and land use patterns that begin to resemble those known from Historic-period Native American groups in the area. There was a substantial increase in the intensity of subsistence exploitation, including fishing, hunting, and gathering (particularly acorns), that correlates directly with an increase in population growth during this period (Moratto 1984:211–214). Economies emphasized resources that could be harvested and processed in bulk, such as acorns, salmon, and shellfish (Rosenthal et al. 2007:156). The period is characterized by shell beads and ornaments, stone beads, clamshell disk beads, tubular stone smoking pipes, and arrow-shaft straighteners. Shaped, flat-bottomed bowl mortars and cylindrical pestles are common. There is an increase in sedentism, accompanied by firm establishment of territorial boundaries, while networks of obsidian and shell bead exchange networks expanded.

Emergent Period (A.D. 1000-Historic)

The Emergent period saw the solidification of the cultural traditions and technologies that are known from the ethnographic present. This period is marked by the introduction of the bow and arrow, which first appears in the Central Valley region between about A.D. 1000 and 1300. In the San Joaquin Valley, villages developed along many side-streams of the foothills, as well as along the river channels at the valley's bottom (Rosenthal et al. 2007).

Historic Context

Early Exploration

Post contact history for the state of California is generally divided into three periods: the Spanish period (1769–1822), the Mexican period (1822–1848), and the American period (1848–present). Although there were brief visits by Spanish, Russian, and British explorers from 1529 to 1769, the beginning of Spanish settlement in California occurred in 1769 with a settlement at San Diego—Mission Basilica San Diego de Alcalá. This was the first of 21 missions that the Franciscans established in Alta California between 1769 and 1823. The Mexican period began in 1822 when word of the successful revolution against the Spanish crown reached California. The Mexican period is marked by extensive land grants, most of which were in the interior of the state, and by exploration by American fur trappers west of the Sierra Nevada Mountains. With the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, California became a territory of the United States.

Kern County

The written history of Kern County began during the Spanish period. In 1772, Pedro Fages, acting governor of Alta California, became the first European to travel to the area. Beginning in today's Imperial Valley, Fages crossed Tejon Pass in the Tehachapi Mountains into Grapevine Canyon, and entered the San Joaquin Valley, all in pursuit of Spanish Army deserters (Hoover et al. 2002:126). Four years later, Francisco Garcés, a Franciscan friar, entered the area from the south. Garcés named a large river, Río de San Felipe, now known as the Kern River.

During the Mexican period, José Aguirre and Ignacio del Valle received a large land grant in 1843—the 97,616-acre Rancho Tejón. In the 1850s, General Edward Beale established a fort and reservation on Tejón ranch lands to protect local Native Americans from depredations by settlers. This outpost served as a military post and stage stop; it later housed a group of camels that Beale brought to the United States to serve in the Mojave Desert, known as the Camel Corps. Beale bought the Tejón Ranch in 1865 and retired there. The Tejon Ranch Company has since acquired many ranchos in the area, amassing in excess of a quarter million acres of land (Hoover et al. 2002:127). The buildings of Fort Tejón have been restored; the site is now Fort Tejon State Historic Park on Interstate 5 (I-5) in Grapevine Canyon.

John C. Fremont led an expedition into Kern County in 1845 and 1846. He brought an artist by the name of Edward Meyer Kern from Philadelphia to act as the topographer for the expedition. While crossing a river, Kern narrowly escaped drowning, and Fremont named the river after his colleague (Schmid 1999:192; Hoover et al. 2002-124).

Mining and Oil Production

Kern County was known for its gold production. Gold was discovered on the upper Kern River in 1853, bringing miners and settlers to the area. Kern County was established in 1866 with portions of Los Angeles and Tulare Counties being set aside to form the new county. It is California's third largest county, and the county seat was established at Havilah in 1866. Asbury Harpending, who made a fortune in gold mining along the Kern River, built a toll road from Bakersfield to Havilah. The county seat was moved from Havilah to Bakersfield in 1874 (Hoover et al. 2002:132).

Oil exploration, production, and use are inextricably woven into the history of California, and of Kern County in particular. The first known use of crude oil by the area's Euro-American population took place during the Spanish period. Large seeps along the west side of the San Joaquin Valley were known by travelers of El Camino Viejo, who used the oil to lubricate their wagon wheels (Hodgson 1993:7).

The first company to locate a producing oil well in the San Joaquin Valley was the Buena Vista Petroleum Company. The company was incorporated in February 1864 by Josiah Otis Lovejoy, an entrepreneur and former ship's captain from San Francisco, and began digging and drilling operations later that same year. The Buena Vista Company's headquarters were located at the old Temblor Ranch, and its first refinery (State Registered Landmark No. 504), located 7 miles from the headquarters and 10 miles west of present-day McKittrick, was designed to produce 5,000 gallons of "burning oil," or kerosene, per month (Burmeister 1972:1). During unusually wet years, the kerosene was transported by wagon to the shores of Tulare Lake and then sent by schooner down the San Joaquin River to Stockton and San Francisco. During dry years, the kerosene was hauled overland to the Port of San Luis Obispo and then transported by ship to San Francisco.

Aside from the petroleum industry, which was first developed in the 1890s within the region, agriculture remained the dominant industry in the southern San Joaquin Valley through the twentieth century. Post-World War II irrigation projects, including the Friant-Kern Canal, brought water to the San Joaquin Valley on an even larger scale, and continued to encourage the development of agriculture and related industries. Today the San Joaquin Valley Continues to be a prominent oil and agricultural and oil-producing region.

Existing Cultural Resources

Methods Used to Identify Known Cultural Resources

To evaluate the project's potential effects on significant cultural resources, S2S conducted a Phase 1 Archaeological Survey Report which relied on archival and records research, a pedestrian survey, and a Sacred Lands File (SLF) search to support its conclusions (S2S, 2021). In addition, the Paleontological Inventory Report for the project site was conducted and included geologic map and literature review, paleontological records search, and a field survey that provided background information pertinent to this analysis which is referenced as appropriate. The methodology and results of these studies are summarized below.

Field Survey

The survey area comprises four separate work parcels: the larger gen-tie parcel, the PG&E property parcel, the smaller Gen-Tie parcel, and the project parcels. The work boundaries are primarily situated on open rolling fields with gentle slopes and much vegetation. The PG&E Property parcel is mostly graded with the Arco Substation present in the center and a large slope cut exposed along the north face of the parcel

Archaeological Field Surveys

On June 29, 2021, Surf to Snow Senior Archaeologist James Mangold completed an intensive pedestrian Phase I archaeological inventory survey of the project site and immediately surrounding area in Kern and Kings Counties. The purpose of the archaeological survey was to identify any previously unrecorded cultural resources within the survey area that may be affected by the project. The survey yielded negative results for the presence of cultural resources.

The survey was completed by walking 15-meter wide transects along the length of the proposed access road. The access road would start at King Road but travel west for 1.5 miles along a paved road, then turns south for 0.9-mile to the Arco Substation. The landforms in the project area range from flats to gently rolling hills, and valleys with sparsely scattered tumbleweed, grasses, datura, and other unidentified low-standing flowering bushes. In all surveyed areas there is evidence of cattle grazing as noted by the presence of cattle wallows, hoof prints, urine-saturated soil, and dried cow dung. Animal burrows are also present throughout the survey area with some extensive and deep burrows observed. Surface visibility was 100% for almost all the areas surveyed. The few exceptions were along fences and road cuts where tumbleweeds gathered head-high, making visibility 0%. No signs of prehistoric or historic period deposits, features, or artifacts were observed during the pedestrian survey.

Archival and Records Search

An archival and records search of the CHRIS was conducted at the SSJVIC located at California State University in Bakersfield on June 14, 2021 by SSJVIC coordinator Celeste M. Thompson (SSJVIC File No. 21-234). Records for known cultural resources as well as previous cultural resource studies within a 0.25-mile radius of the project site were examined. The search also included the examination of several references and databases on file at the SSJVIC. Those references included the following historic registers maintained by the State of California:

- NRHP Directory of Determinations of Eligibility (California Office of Historic Preservation, Volumes I and II 1990);
- California Inventory of Historic Resources (California Department of Parks and Recreation 1976);
- California Office of Historic Preservation's Built Environment Resources Directory User's Guide (California Office of Historic Preservation 2019).

The archival and records search identified 11 studies within 0.25 miles of the project area. Of the 11 studies, 10 overlapped with the study area and only 1, (# KE-00632), yielded a positive result. KE-00632 was conducted in 1994 by A. MacDougall of PG&E who surveyed an area west of the Arco Substation. Under this previous study, only a small portion in the project site was surveyed and yielded negative results for the presence of cultural resources; the positive findings in the study are outside of the project site. The previous studies conducted are summarized in **Table 4.5-1: Cultural Resource Studies Conducted Within 0.25 miles of the Project Site**.

TABLE 4.5-1: CULTURAL RESOURCE STUDIES CONDUCTED WITHIN 0.25 MILES OF THE PROJECT SITE

Study Number	Author	Date	Title	Study Positive?
Within a 0.25-mile radius				
KE-03606	J.F. Romani	2009	Archaeological Survey Report: Improvements to King Road to County Line (approximately 4.5 miles), Unincorporated Area, Kern County, CA	No
Within the project site				
KE-00632	A. Macdougall	1994	Cultural Resource Investigation of PG&E's Proposed 70 kV Transmission Line to the Department of Water Resources, Devil's Den, Bluestone and Polonio Pass Pumping Plants and PG&E's Proposed 12 kV Distribution Line to the Department of Water Resources Tank 1 Water Treatment Plant	Yes, however the positive findings identified in the study were located outside the Azalea Solar project area
KE-01182	R.A. Schiffman, A.P. Garfinkel	1980	Draft – Archaeological Overview of Kern County	No
KE-01183	R.A. Schiffman, A.P. Garfinkel	1981	Prehistory of Kern County – An Overview	No

TABLE 4.5-1: CULTURAL RESOURCE STUDIES CONDUCTED WITHIN 0.25 MILES OF THE PROJECT SITE

Study Number	Author	Date	Title	Study Positive?
KE-01960	J.H. Cleland, C.M. Woods, E.J. Skinner, M.S. Kelly, R.M. Apple	1986	Kern River Pipeline Cultural Resource Overview	No
KE-02232	Cawley	1961	Cawley Manuscript	No
KE-02873	Aspen Environmental Group	2001	Los Baños-Gates 500 kV Transmission Project: Draft Supplemental Environmental Impact Report (Cultural Resources Section)	No
KE-04435 (KI-00238)	J. Meyer, D.C. Young, J. Rosenthal	2010	Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9 – Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways – EA 06-0A7408 TEA Grant	No
KE-4435a	J. Meyer, D.C. Young, J. Rosenthal	2010	Volume II: Appendices A Geoarchaeological Overview and Assessment of Caltrans District 6 and 9 – Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways – EA 06-0A7408TEA Grant	No
KE-05136	D.S. Whitley, P.A. Carey	2017	Phase 1 Survey/Class III Inventory, Alamo Springs Solar Project, Kings and Kern Counties, CA	No
KI-00071	G.S. Breschini, T. Haversat, R.P. Hampson, M. Ryan, C.R. Smith, G. Lee, L.H. Shoup	1983	A Cultural Resources Overview of the Coast and Coast-Valley Study Areas	No
KI-00269	R.A. Schiffman	2015	Archaeological Evaluation of Areas Selected for Possible Nuclear Power Plants by the LADWP	No

SOURCE: S2S, 2021

Sacred Lands File Search

A search of the Sacred Lands File was requested to the NAHC for the project areas on June 9, 2021. Andrew Green, Cultural Resources Analyst with the NAHC, responded to the request on June 30, 2021 and noted that the search was negative and failed to reveal the presence of known Native American resources within the project area.

Potential for Unknown Buried Cultural Resources

The Quaternary alluvial sediments are subdivided into two units: the older (Pleistocene) Quaternary sediments, and younger (Holocene) alluvial surface deposits (S2S, 2021). These alluvial sediments are derived from nearby granitic mountains and have been deposited on the valley floor over the course of thousands of years. The younger Quaternary valley alluvial deposits, composed of weathered soil material and poorly sorted clay, silt, and sand, may be up to several hundred feet thick in valley areas, and thinner on slopes at the valley margins. The precise thickness of the younger alluvial deposits within the project area, however, is unknown and anticipated to vary.

In many places, the interface between older land surfaces and newer alluvial depositions is marked by a well-developed buried soil profile, or paleosol. Paleosols preserve the composition and character of the earth's surface prior to subsequent sediment deposition; thus, paleosols have the potential to preserve archaeological resources if the area had been occupied or settled by humans. Holocene alluvium and Pleistocene-age surfaces buried by Holocene alluvium are the most likely landforms to contain paleosols. However, because human populations have grown since the arrival of the area's first inhabitants, younger paleosols (late Holocene) are more likely to yield archaeological resources than older paleosols (early Holocene or Pleistocene). Additionally, the project site contains Pleistocene to late Pliocene sediments contain unconsolidated to well consolidated, clay, silt, sand, and gravel deposited in ancient alluvial fans, deltas, flood plains, lakes, and marshes, brackish marine deposits, or shallow marine deposits.

A synthesis of geoarchaeological studies in the project vicinity indicate that the project site, has a low to high potential to contain buried archaeological resources (S2S, 2021). However, given that the project site would be located in an area with Holocene-age young alluvium (Qa), Pleistocene-age older alluvium (Qoa), late Pliocene-age San Joaquin Formation (Tsj), and Pliocene-age Etchegoin Formation (Te) sediments, there is a possibility that the deposition of alluvium has buried prehistoric archaeological sites that once existed on the surface. Therefore, there is a possibility that buried archaeological resources may be encountered during project-related excavation.

4.5.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Register of Historical Resources (CRHR)

Created in 1992 and implemented in 1998, the California Register is “an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.” Certain properties, including those listed in, or formally determined eligible for listing in, the National Register of Historic Places (NRHP) and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR (also referred to as the California Register). Other

properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the California Register. A resource, either an individual property or a contributor to a historic district, may be listed in the California Register if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on National Register criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC Section 5024.1, Title 14 California Code of Regulations [CCR], Section 4852(c), a cultural resource must retain integrity to be considered eligible for the California Register. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the California Register based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions.

California Historical Landmarks

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have Statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the California Register.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type in the State or within a large geographic region (Northern, Central, or Southern California);
2. It is associated with an individual or group having a profound influence on the history of California; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California PHI are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type within the local geographic region (city or county);
2. It is associated with an individual or group having a profound influence on the history of the local area; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (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. The *CEQA Guidelines* (Title 14 CCR Section 15064.5) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register; (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); and (3) any object, building, structure, site, area, place, record, or manuscript which 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 by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of CEQA Section 21084.1 and *CEQA Guidelines* Section 15064.5 apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of an historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (*CEQA Guidelines* Sections 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA *Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in CEQA Section 21083.2, a “unique” archaeological resource is an archaeological artifact, object, or site, for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.2(b)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA *Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA *Guidelines* Section 15064.5(c)(4)).

Native American Heritage Commission

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

California Public Records Act

California Public Records Act Sections 6254(r) and 6254.10 were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public related to “Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission.” Section 6254.10 specifically exempts from disclosure requests for “records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency.”

California Health and Safety Code Sections 7050 and 7052

Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

California Penal Code Section 622.5

California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

Public Resources Code Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for cultural resources applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1. Land Use, Open Space and Conservation Element

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

- Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.
- Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.
- Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

- Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.
- Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

4.5.4 Impacts and Mitigation Measures

Methodology

Impacts on cultural resources could result from ground-disturbing activities needed to construct the project. Ground-disturbing activities include project-related excavation, grading, trenching, vegetation clearance, the operation of heavy equipment, or other surface and sub-surface disturbance that could damage or destroy surficial or buried cultural resources including prehistoric or historic-period archaeological resources or human burials. S2S conducted a Phase 1 Archaeological Survey Report, which relied on archival and records research, a pedestrian survey, and a Sacred Lands File (SLF) search. Using these resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in *CEQA Guidelines* Appendix G, to determine if a project could potentially have a significant adverse effect on cultural resources.

A project would have a significant adverse effect on cultural resources if it would:

- a. Cause a substantial adverse change in the significance of a historical resource, as defined in *CEQA Guidelines* Section 15064.4;
- b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to *CEQA Guidelines* Section 15064.4; or
- c. Disturb any human remains, including those interred outside of dedicated cemeteries.

All of the above impact thresholds are addressed in the project impacts section below. Impacts to tribal cultural resources have been addressed in Section 4.16, *Tribal Cultural Resources*, of this EIR.

Project Impacts

Impact 4.5-1: The project would cause a substantial adverse change in the significance of a historical resource, as defined in CEQA Guidelines Section 15064.5.

The archival and records search for known cultural resource studies revealed 11 studies conducted within 0.5 miles of the project site. 10 of these sites overlapped with the project area. Of the 10 identified studies

that overlapped the project site, there was only one study that yielded a positive finding. The remaining nine studies yielded negative results and no resources were located. In the study area that did yield a resource, that cultural resource was located outside the project boundaries. Records request of the Sacred Land database and Native American Consultation also failed to reveal a known presence of Native American resources within the project area.

In addition to the records search, an intensive pedestrian Phase I archaeological inventory survey of the project site was conducted to identify any previously unrecorded cultural resources that could be affected by the project. No signs of prehistoric or historic period deposits, features, or artifacts were observed during the pedestrian survey.

Based on the records search results, field survey, and NAHC Sacred Lands File, appears to have a low sensitivity for prehistoric/Native American cultural resources. The majority of resources are expected to be isolated artifacts rather than archaeological sites. Nonetheless, the project could impact previously unknown and buried archaeological deposits that have the potential to qualify as historical resources. Buried archaeological sites may be encountered during project-related excavation. In the event that unknown archaeological resources that qualify as historical resources are discovered during project construction, significant impacts could occur. Mitigation Measure MM 4.5-1 would require cultural resources sensitivity training for construction workers, implementation of avoidance measures should prehistoric archaeological resources or sites be inadvertently located, archaeological and Native American monitoring during construction, and appropriate treatment of unearthed archaeological resources during construction. Implementation of these measures would reduce impacts to unknown resources to less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to historic resources within these areas would be minimal. As discussed above, there is no indication that areas would have a high sensitivity for the presence of cultural resources. These areas have been heavily disturbed and surrounding areas and not revealed a significant number of finds. In addition, MM 4.5-1 through MM 4.5-2 would be applied during construction of the gentie line and access road. Impacts would be less than significant.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is not anticipated to result in impacts on cultural resources. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to cultural resources.

Mitigation Measures

MM 4.5-1: The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2011), to carry out all mitigation measures related to archaeological and historical resources. The contact information for this Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities on-site. Further, the

Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:

- a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist, in consultation with the Native American monitor(s), shall prepare Cultural Resources Sensitivity Training materials to be used in orientation program given to all personnel working on the project. A Cultural Resources Sensitivity Training Guide approved by the Lead Archaeologist shall be provided to all personnel. A copy of the Cultural Resources Sensitivity Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. A copy of the proposed training materials shall be provided to the Planning and Natural Resources Department prior to the issuance of any grading or building permit.
- b. The project proponent/operator shall ensure all new employees or onsite workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet provisions specified above.
- c. The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.
- d. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept on-site and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Lead Archaeologist to ensure all employees receive appropriate training before commencing work on-site.
- e. During implementation of the project, the services of Native American tribal monitors, as identified through consultation with appropriate Native American tribes, working under the supervision of the Lead Archaeologist, shall be retained by the project to monitor project-related construction activities.

MM 4.5-2: During implementation of the project, in the event that archaeological materials are encountered during the course of grading or construction, the project contractor shall cease any ground-disturbing activities within 50 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of the discovery. Signs shall be posted that establish it as an Environmentally Sensitive Area, and all entrance into the area shall be avoided until the discovery is assessed by the lead archaeologist and any Native American representatives affiliated with the project vicinity. The lead archaeologist, in consultation with any Native American representatives, shall evaluate the significance of the resources and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act (CEQA) Guidelines Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources.

Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the lead archaeologist, in consultation with any Native American representatives, shall develop additional treatment measures in consultation with

the County of Kern (County), which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthened cultural resources if the resources are prehistoric or Native American in nature. Diagnostic archaeological materials with research potential recovered during any investigation shall be curated at an accredited curation facility. The lead archaeologist, in consultation with a designated Native American monitor, shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 and MM 4.5-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is not anticipated to result in impacts on cultural resources. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to cultural resources.

Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

As discussed in Impact 4.5-1, there is no known cultural resources on site. However, there is the potential for the project to impact unknown, subsurface archaeological resources. The project's cultural resource report has identified the project site as having a low potential for archaeological sensitivity but that if a resource is discovered it would have a high potential to have be a "unique" archaeological resource under PRC §21083.2, (Appendix F). Therefore, there is the potential for buried archaeological resources to be encountered during project-related excavation. In the event that unknown archaeological resources are discovered during project construction, significant impacts could occur. However, with implementation of MM 4.5-1 and MM 4.5-2, which require cultural resources sensitivity training for construction workers, archaeological monitoring during construction, and appropriate treatment of unearthened archaeological resources during construction, potential impacts would be reduced to less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Potential impacts to archaeological resources within these areas would be minimal. As discussed above, there is no indication that these areas would have a high sensitivity for the presence of cultural resources. Both areas have been heavily disturbed and surrounding areas and not revealed a significant

number of finds. In addition, MM 4.5-1 and MM 4.5-2 would be applied during construction of the gen-tie line and access road. Impacts would be less than significant.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is not anticipated to result in impacts on cultural resources. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 and MM 4.5-2.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 and MM 4.5-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.5-3: The project would disturb any human remains, including those interred outside of formal cemeteries.

There is no indication, either from the archival research results or the pedestrian foot survey, that any particular location within the study area has been used for human burial purposes in the recent or distant past. However, in the event that human remains are inadvertently discovered during project construction activities, the human remains could be damaged or disturbed, which would be a significant impact. Implementation of MM 4.5-3 and MM 4.5-4 would ensure that any human remains encountered during project implementation are properly treated, thus reducing impacts to a less-than-significant level.

PG&E Arco Substation Modification and Electric Transmission Interconnection

Potential impacts to unknown buried human remains within these areas would be minimal. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. As discussed above, there is no indication that these areas have a high sensitivity for the presence of human remains. These areas have been previously disturbed and surrounding areas have not revealed a significant number of positive findings. In addition, MM 4.5-4 which specifically relates to the inadvertent discovery of human remains would be applied during construction of the gen-tie line and access road. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to cultural resources, including human remains. Impacts would be less than significant.

Mitigation Measures

MM 4.5-3: During implementation of the project, the services of both an Archaeological and Native American Tribal Monitor, working under the supervision of the Lead Archaeologist shall

be retained by the project proponent/operator to monitor, on a full-time basis, ground-disturbing activities associated with project-related construction activities, as follows:

- a. All initial ground-disturbing activities, shall be monitored by Native American Tribal Monitors and Archaeological monitors.
- b. During implementation of the project, Archaeological and Native American monitoring shall be conducted for all excavation or grading activities. If no archaeological discoveries are made during the course of this monitoring, no additional monitoring will be required. If the qualified archaeologist can demonstrate a need for continuing monitoring, the qualified archaeologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances as warranted.
- c. For all other ground-disturbing activities within the project area, initial excavation or ground-disturbing activities shall be monitored by Archaeological and Native American monitors. During the course of this initial monitoring, if the Lead Archaeologist can demonstrate that the level of monitoring should be reduced or discontinued, or if the Lead Archaeologist can demonstrate a need for continuing monitoring, the Lead Archaeologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances as warranted.
- d. The Archaeological monitors and Native American monitors shall work under the supervision of the Lead Archaeologist. The Lead Archaeologist, Archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. Should the services of any additional individuals be retained (as the Lead Archaeologist or Archaeological monitor, or Native American monitor) subsequent to commencement of ground disturbing activities, such individuals shall be provided all proposed project documentation related to cultural resources within the project area, prior to beginning work. Documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the Lead Archaeologist and Archaeological monitor, and Native American monitor.
- e. The Archaeological monitor shall keep daily logs and the Lead Archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department, and to the southern San Joaquin Valley Information Center at California State University, Bakersfield

MM 4.5-4: If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in of the California Environmental Quality Act *Guidelines* Section 15064.4(e)(1). If the County Coroner

determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code (PRC) Section 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per PRC Section 5097.98. Per PRC Section 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (Section 7100 et. seq.) directing identification of the next-of-kin will apply.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-3 and MM 4.5-4, impacts would be less than significant. Impacts would be less than significant for the PG&E Arco Substation modifications and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the projects discussed in Chapter 3, *Project Description*, and as shown in **Table 3-3: Cumulative Projects List**, of this EIR, would have on cultural resources. The geographic area of analysis of cumulative impacts for cultural resources includes the surrounding areas within the local as well as regional portions of the Central Valley. This geographic scope of analysis is appropriate because the archaeological and historical resources within this area are expected to be similar to those that occur on the project site because of their proximity, and because the similar environments, landforms, and hydrology would result in similar land-use—and thus, site types. Similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity. This is a large enough area to encompass any effects of the project on cultural resources that may combine with similar effects caused by other past, current, and reasonably foreseeable future projects, and provides a reasonable context wherein cumulative actions could affect cultural resources. Multiple projects, including solar energy production facilities, are proposed throughout Kern County and other areas within the Central Valley. Cumulative impacts to cultural resources could occur if other related projects, in conjunction with the project, had or would have impacts on cultural resources that, when considered together, would be significant.

As discussed above, development of the project, in combination with other projects in the area, has the potential to contribute to a cumulatively significant cultural resources impact due to the potential loss of historical and archaeological resources unique to the region. However, mitigation measures are included in this EIR to reduce potentially significant impacts to unknown archaeological resources that could be encountered during construction of the project. Implementation of MM 4.5-1 requires cultural resources sensitivity training for construction workers. MM 4.5-2 requires the preparation of a Cultural Resources Treatment Plan to ensure protection of cultural resources. Implementation of these mitigation measures would reduce the project's incremental potential impacts to historical and archaeological resources to a less-than-significant level and ensure that project impacts to cultural resources are not cumulatively considerable.

Lastly, although project construction has the potential to disturb human remains, as do other projects in the cumulative study area. Implementation of MM 4.5-3 and MM 4.5-4 would ensure that appropriate laws and protocols, as well as appropriate best practices relating to Tribal Cultural Resources, are followed with regard to identifying and handling remains and would also ensure that cumulative impacts arising from disturbance from the project are not significant.

With implementation of MM 4.5-1 through MM 4.5-4, the project would not result in significant impacts to cultural resources. Given this minimal impact, as well as similar mitigation requirements for other projects in the San Joaquin Valley and Kern County, the project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects, and the effects of probable future projects. Thus, cumulative impacts to cultural resources would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

Potential impacts to historical and archaeological resources, as well as human remains within these areas would be minimal. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. As discussed above, there is no indication that these areas have a high sensitivity for the presence of cultural resources. These areas have been previously disturbed and surrounding areas have not revealed a significant number of positive findings. In addition, MM 4.5-1 through MM 4.5-4 would be applied during construction of the gen-tie line and access road. Impacts would be less than significant. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to cultural resources, including human remains. Impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-4.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4, impacts would be less than significant. Impacts would be less than significant for the PG&E Arco Substation modifications, and no mitigation would be required for the PG&E Interconnection Facilities.

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Section 4.6 Energy

4.6.1 Introduction

This energy section of the EIR analyzes the energy implications of the project, focusing on the following energy resources: electricity and transportation-related energy (petroleum-based fuels). This Energy section also includes general information relating to natural gas, however, no natural gas is proposed to be used in conjunction with the proposed project. This section includes a summary of the project's anticipated energy needs (detailed energy calculations are based on air quality outputs provided in the *Air Quality and Greenhouse Gas Emissions Study* provided in Appendix C of this EIR), and conservation measures. Information in this section is primarily based on the *Energy Technical Report* prepared by Surf to Snow Environmental Resource Management, Inc. (S2S) provided in Appendix G of this EIR. In addition, the information found herein, as well as other aspects of the project's environmental-related energy impacts, are discussed in greater detail elsewhere in this EIR, including in Chapter 3, *Project Description*, Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*, of this EIR.

This section provides the content and analysis required by Public Resources Code, Section 21100(b)(3), and described in Appendix F to the *CEQA Guidelines* (AEP, 2018). Public Resources Code Section 21100(b) and Section 15126.4 of the *CEQA Guidelines* require that an EIR identify mitigation measures to minimize a project's significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F states that the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Project Description, Environmental Setting and Impact Analysis portions of technical sections, as well as through mitigation measures and alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 *CEQA Guidelines* (California Natural Resources Agency, 2018). Appendix G was amended to now include the analysis of energy. Previously included in Appendix F, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and conflicts with state or local energy efficiency plans (California Natural Resources Agency, 2018).

4.6.2 Environmental Setting

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components for distribution and use. The electricity generated is distributed through a network of transmission and distribution lines, commonly called a power grid.

Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

According to the U.S. Energy Information Administration, California used approximately 255,224 gigawatt hours of electricity in 2018 (EIA 2020a). By sector in 2017, commercial uses utilized 46% of the state's electricity, followed by 35% for residential uses and 19% for industrial uses (EIA 2020a). Electricity usage in California for different land uses varies substantially by the types of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2020b).

Pacific Gas & Electric Company (PG&E) provides electrical and natural gas service to the region. Incorporated in California in 1905, PG&E is one of the largest combination natural gas and electric utilities in the United States. It currently provides service to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada in the east. The service area includes 106,681 circuit miles of electric distribution lines, 18,466 circuit miles of interconnected transmission lines, 42,141 miles of natural gas distribution pipelines, and 6,438 miles of transportation pipelines. PG&E and other utilities in the state are regulated by the California Public Utilities Commission (CPUC) (PG&E 2020). According to the California Energy Commission (CEC), approximately 78 billion kilowatt-hours of electricity were used in PG&E's service area in 2019 (CEC 2020a).

Retail electric service in Kern County is split between Pacific Gas and Electric (PG&E) and Southern California Edison (SCE). PG&E's retail service is concentrated in western Kern County while SCE serves the east County area. Refer to the interactive map of PG&E's retail electric service territory (PG&E, 2020). The project is located in PG&E's retail electric service territory. Accordingly, electric power for construction and station power for operations would be brought to the site through a new PG&E service connection. **Table 4.6-1: Electric Power Mix in 2019**, statewide power mix for 2019, the most recent year in which data is available.

TABLE 4.6-1: ELECTRIC POWER MIX IN 2021

Energy Resource	2019 CA Power Mix (for comparison)^a
Eligible Renewable^a	33.7%
Biomass & bio-waste ^b	2.3%
Geothermal	4.8%
Small hydroelectric	1.0%
Solar	14.2%
Wind	11.4%
Coal	3%
Large Hydroelectric	9.2%
Natural Gas	37.9%
Nuclear	9.3%
Other (waste heat/petroleum coke)	0.2%
Unspecified sources of power^c	6.8%
Total	100%

^a The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.

^b Unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source.

^c Renewable energy credits (RECs) are tracking instruments issued for renewable generation. Unbundled renewable energy credits (RECs) represent renewable generation that was not delivered to serve retail sales. Unbundled RECs are not reflected in the power mix or GHG emissions intensities above.

SOURCE: 2021 Power Content Label, Available at <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation>

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs and delivered through high-pressure transmission pipelines. Natural gas provides almost one-third of the state's total energy requirements. Natural gas is measured in terms of cubic feet (cf). Southern California Gas Company is the natural gas provider in Kern County; however, there is not a known natural gas service for the project site.

Transportation

According to the California Energy Commission (CEC), transportation accounted for approximately 40 percent of California's total energy consumption in 2019 (CEC, 2019). In 2018, California consumed 13.06 billion gallons of gasoline and 3.1 billion gallons of diesel fuel (California Department of Tax and Fee Administration 2022a, and 2022b). Petroleum-based fuels (gasoline) currently are currently comprised of approximately 90 percent petroleum base and 10 percent ethanol that was used to replace Methyl Tertiary Butyl Ether (MTBE) as a blending agent for California's transportation fuel use (CEC, 2021). The State is

still working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles traveled (CEC, 2016). The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels (CEC, 2021). According to CEC survey of gasoline sales, Kern County on-road transportation sources consumed approximately 364 million gallons of gasoline and 116 million gallons of diesel fuel in 2019 (CEC, 2022).

4.6.3 Regulatory Setting

Federal

Corporate Average Fuel Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and United States Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the “maximum feasible level” with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy. Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type.

National Energy Policy and Conservation Act

The National Energy Conservation Policy Act serves as the underlying authority for Federal energy management goals and requirements. Signed into law in 1975, it has been regularly updated and amended by subsequent laws and regulations. Pursuant to the Act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer’s average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Policy Act of 2005

The Energy Policy Act of 2005 sets equipment energy efficiency standards and seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Act, consumers and businesses can attain Federal tax credits for purchasing fuel efficient

appliances and products, including hybrid vehicles; constructing energy-efficient buildings; and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary micro-turbine power plants, and solar power equipment.

Energy Independence and Security Act of 2007

The Energy and Independence Security Act of 2007 (EISA) sets Federal energy management requirements in several areas, including energy reduction goals for Federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, energy-efficient product procurement, and reduction in petroleum use and increase in alternative fuel use. This Act also amends portions of the National Energy Policy and Conservation Act. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following provisions: Renewable Fuel Standard (RFS); Appliance and Lighting Efficiency Standards; and Building Energy Efficiency Standards.

State

Senate Bill 1389

Senate Bill (SB) 1389 (Public Resources Code Sections 25300–25323; SB 1389) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protects the environment; ensures reliable, secure, and diverse energy supplies; enhances the state's economy; and protects public health and safety (Public Resources Code Section 25301[a]). The 2016 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California, including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, update on trends in California's sources of crude oil, update on California's nuclear plants, and other energy issues.

California's Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (CPUC, 2018).

In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that the California Air Resources Board (CARB) should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy

procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy. The project would be an RPS-eligible facility.

California Assembly Bill 1493 (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's CO₂ emissions, Assembly Bill (AB) 1493 (commonly referred to as CARB's Pavley regulations), enacted in 2002, requires CARB to set GHG emission standards for new passenger vehicles, light-duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016 and Phase II established standards for model years 2017–2025. Refer to Section 4.8, Greenhouse Gas Emissions, of this EIR for additional details regarding this regulation.

California Health and Safety Code (HSC), Division 25.5/California

Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (codified in the California HSC, Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, CARB has the primary responsibility for reducing the state's GHG emissions; however, AB 32 also tasked the CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector. In 2016, SB 32 and its companion bill AB 197 amended HSC Division 25.5 and established a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and included provisions to ensure that the benefits of state climate policies reach into disadvantaged communities. Refer to Section 4.8, Greenhouse Gas Emissions, of this EIR for additional details regarding these regulations.

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with 0.25 percent in 2011 and culminating in a 10-percent total reduction in 2020. Petroleum importers, refiners and wholesalers can either develop their own low carbon fuel products, or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas and hydrogen.

California Air Resources Board

CARB's Advanced Clean Car Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations. The program requires a greater number of zero-emission vehicle models for years 2015 through 2025 to control smog, soot and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and the Zero-Emissions Vehicle regulations (ZEV) to require manufactures to

produce an increasing number of pure ZEV's (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

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

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

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles.

In addition to limiting exhaust from idling trucks, in 2008, CARB approved the Truck and Bus regulation to reduce NO_x, PM₁₀, and PM_{2.5} emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower, such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets. While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

California Energy Action Plan Update

The 2008 Energy Action Plan Update provides a status update to the 2005 Energy Action Plan II, which is the State's principal energy planning and policy document (CPUC and CEC, 2008). The plan continues the goals of the original Energy Action Plan, describes a coordinated implementation plan for State energy policies, and identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. First-priority actions to address California's increasing energy demands are energy efficiency, demand response (i.e., reduction of customer energy usage during peak periods in order to address system reliability and support the best use of energy infrastructure), and the use of renewable sources of power. If these actions are unable to satisfy the increasing energy and capacity needs, the plan supports clean and efficient fossil-fired generation.

California Building Standards Senate Bill 1078 and 107; Executive Order S-14-08, S-21-09, and SB 2X

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) accelerated the due date of the 20 percent mandate to 2010 instead of 2017. These mandates apply directly to investor-owned utilities. In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Portfolio Standard to 33 percent renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing Executive Order S-21-09, which directs the CARB under its AB 32 authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SBX1-2 (2011) codified the 33 percent by 2020 goal.

Executive Order B-30-15; Senate Bill 100 and 350

In April 2015, the Governor issued Executive Order B-30-15, which established a GHG reduction target of 40 percent below 1990 levels by 2030. SB 350 (Chapter 547, Statutes of 2015) advanced these goals

through two measures. First, the law increases the renewable power goal from 33 percent renewables by 2020 to 50 percent by 2030. Second, the law requires the CEC to establish annual targets to double energy efficiency in buildings by 2030. The law also requires the California Public Utilities Commission (CPUC) to direct electric utilities to establish annual efficiency targets and implement demand-reduction measures to achieve this goal. In 2018, SB 100 revised the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

Assembly Bill 32 (2006) and Senate Bill (2016)

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006." AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels; the same requirement as under S-3-05) and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Reductions in overall energy consumption have been implemented to reduce emissions.

In September 2016, the Governor signed into legislation SB 32, which builds on AB 32 and requires the state to cut GHG emissions to 40 percent. With SB 32, the Legislature also passed AB 197, which provides additional direction for updating the Scoping Plan to meet the 2030 GHG reduction target codified in SB 32.

During June 2021, CARB in collaboration with other State agencies, held a three-day public workshop series to initiate the development of the update to the AB 32 Climate Change Scoping Plan, which is due in 2022 and will reflect California's goal to achieve carbon neutrality by 2045. Part of the effort in meeting California's long-term reduction goals include reducing petroleum use in cars and trucks by 50 percent,

increasing from one-third to more than one-half of California's electricity derived from renewable sources, doubling the efficiency savings achieved at existing buildings and making heating fuels cleaner; reducing the release of methane, black carbon, and other short-lived climate pollutants, and managing farm and rangelands, forests, and wetlands so they can store carbon.

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law SB 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the CPUC. The CEC regulations do the following:

- Establish a standard for baseload generation owned by, or under long-term contract, to publicly owned utilities of 1,100 pounds of carbon dioxide (CO₂) per megawatt-hour. This encourages the development of power plants that meet California's growing energy needs while minimizing their emissions of GHGs.
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This facilitates public awareness of utility efforts to meet customer needs for energy over the long-term while meeting the state's standards for environmental impact.
- Establish a public process for determining the compliance of proposed investments with the emissions performance standard.

Cap-and-Trade Program

The achieve the goals of AB 32, the Climate Change Scoping Plan: A Framework for Change included an early action plan to develop a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system. The cap-and-trade regulation, which is a key element of California's climate plan, took effect in January 2012, and compliance obligation began in January 2013. The cap-and-trade program sets a statewide limit on sources responsible for 85% of California's GHG emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions. The first phase of the cap-and trade regulation included generated in and imported into California, large combustion sources (i.e., generally those emitting more than 25,000 metric tons [MT] of CO₂e per year), and certain industrial sectors. The second phase added providers of transportation fuels and other combustion fuels (e.g., natural gas, propane) to the cap-and-trade program. The regulation requires that emissions generated by these facilities and combustion of fuels be reduced over time under a declining "cap."

California Environmental Quality Act

In accordance with CEQA and Appendix F, Energy Conservation, of the 2018 *CEQA Guidelines*, and to assure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *CEQA Guidelines* provides a list of energy-related topics to be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy,

Appendix F provides the following topics for consideration in the discussion of energy use in an EIR, to the extent the topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources; and
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 *CEQA Guidelines* (California Natural Resources Agency, 2018). Appendix G was amended to now include the analysis of energy. Previously included in Appendix F, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and conflicts with state or local energy efficiency plans (California Natural Resources Agency, 2018). Appendix F did not describe or require significance thresholds for determining the significance of impacts related to energy. According to the updated Appendix G Checklist, Issue VI. Energy, a project would have a significant impact on energy and energy resources if it would:

- a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Local

Kern County General Plan

The goals, policies, and implementation measures in the Energy Element of the Kern County General Plan (Kern County 2009) applicable to energy, as related to the project, are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below.

Chapter 5. Energy Element

5.4.5. Solar Energy Development

Goal

Goal 1: Encourage safe and orderly commercial solar development.

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

4.6.4 Impacts and Mitigation Measures

Methodology

This analysis addresses the project's potential energy usage, including electricity and transportation fuel. Energy consumption during both construction and operation is assessed. Specific analysis methodologies are discussed below. The assessment presented herein is based in part on the *Energy Technical Report* (S2S, 2021) prepared for the project. A full copy of the report is provided in Appendix G of this EIR.

Construction

Electricity is not expected to be consumed in large quantity during project construction, as construction equipment and vehicles are not electric (diesel- or gas-powered). However, electricity is expected to be consumed from well-water pumping during construction. The water-related energy use during project construction was calculated using water usage assumptions provided by S2S, see Appendix K, *Water Supply Assessment*.

Natural Gas

Natural gas is not proposed to be consumed during project construction (i.e., no natural gas-powered equipment or vehicles). Therefore, natural gas associated with construction activities was not calculated. Natural gas is not proposed to be consumed during project operation. Therefore, natural gas associated with operations was not calculated.

Petroleum

Regarding transportation-related fuel consumption during construction, the project construction equipment and haul trucks would likely use diesel-fuel, while the construction worker commute vehicles are anticipated to be primarily gasoline-fueled. Construction activity durations, off-road equipment, horsepower ratings, hours of use, and load factors were used to calculate construction-related fuel use, provided by the applicant and default assumptions from California Emissions Estimator Model (CalEEMod), version 2016.3.2. The estimated fuel economy for haul trucks and worker commute vehicles (on-road sources) is based on fuel consumption factors from the CARB EMFAC emissions model, which is a state-approved model for estimating emissions on-road vehicles and trucks. Both OFFROAD and EMFAC are incorporated into CalEEMod, which is a state-approved emissions model used for the project's air quality and GHG emissions assessment. Further details associated with off-road equipment and on-road vehicle fuel consumption during project construction can be found in was Appendix G of this EIR.

Electricity

Electricity would be used by the project for pumping water needed for watering during grading and a smaller volume of water needed for panel washing and other operation and maintenance uses. As with construction, water would be purchased from existing water purveyors and would be supplied from irrigation supply turnouts near the project site during construction of the project, minimal electricity use would be consumed by water pumping. The project would operate unattended with minimal maintenance needs and so the use of energy resources during operations will be minor. A small amount of electricity will be needed to operate the project such as emergency lighting for the substation and battery area. Retail service to serve operations will be provided by PG&E, the local electricity provider. During project operation, the facility will be generating renewable energy for the grid. A small amount of electricity will be needed to operate the project (emergency lights for the substation and battery area) and will be provided directly from the grid. There would also be the relatively insignificant electric energy use for equipment (computer consoles, etc.) needed to operate the facility from a remote location. There will be no on-site operations building requiring lighting for personnel and parking areas, etc.

Transportation fuel use for the project would primarily be associated with motor vehicles (automobiles and light-duty trucks) traveling to and from the project site for periodic maintenance including panel washing. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Based on conservative estimates for vehicular travel, the project is anticipated to have up to 240 trips per year during operation, accounting for the commutes and performance of regular inspection and maintenance activities by up to five employees.

Assuming (very conservatively) that all eight workers commute from the Bakersfield area for up to 240 commuter-days per year totaling 54,000 miles per year, operations would involve the use of an additional 2,186 gallons of gasoline from worker commutes (54,000 miles per year / 24.7 miles per gallon of gasoline). This is a relatively small amount of fuel use, and necessary to ensure the reliable operations of the facility. Therefore, there would be no wasteful, inefficient, or unnecessary consumption of energy resources during operations.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify, per Appendix G of the *CEQA Guidelines*, a project would have a significant impact on energy and energy resources if it would:

- a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Project Impacts

Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Construction and Decommissioning

Construction and decommissioning of the new solar energy generation facility is expected to require the use of non-renewable resources in the form of gasoline and diesel to power off-road construction equipment and on-road vehicles as well as electricity consumed from water pumping during construction of the project. As shown in **Table 4.6-2: Project Construction Energy Usage**, construction activities are expected to consume approximately 70,667 gallons of diesel and 13,466 gallons of gasoline during the estimated 12 to 14 - month construction period. This fuel consumption would be approximately 2,639,745.97 kWh from the diesel and 433,201.42 kWh from the gasoline. As shown in **Table 4.6-2**, construction of the proposed project would consume the equivalent of approximately 3,072,947.39 kWh per year. This would represent 0.021 percent of the total electricity in Kern County in 2020.

As noted above, construction of the project would not result in any natural gas consumption on the site (similarly, decommissioning of the project would not result in any natural gas consumption on the site). Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of natural gas, and impacts would be less than significant.

Commercial scale solar projects in Kern County are estimated to have a 35-year lifespan before decommissioning would be expected. Energy consumption associated with decommissioning activities are anticipated to be similar to construction activities. The consumption of fuels during construction and decommissioning would be irreversible. Although construction and decommissioning activities would be temporary, the project could result in a wasteful, inefficient, or unnecessary consumption of energy resources if available control measures are not implemented. The project does not propose any energy control measures during construction. As a result, this impact could be potentially significant. Implementation of Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR, would require the use of energy-efficient and alternatively-fueled equipment during project construction and would also ensure compliance with Title 13, California Code of Regulations, Section 2449 et seq., which imposes construction equipment idling restrictions. Compliance with Title 13 would also help to reduce unnecessary fuel consumption during project construction. With implementation of this mitigation, the project would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuels and impacts would be reduced to less than significant.

TABLE 4.6-2: PROJECT CONSTRUCTION ENERGY USAGE

Source	Fuel Consumption (gallons)	Energy Use (kWh)
Kern County (2020)		14,965,776,318
Construction:		
Off-Road Equipment Fuel (Diesel)	70,667	2,639,745.97
On-Road Vehicle Fuel (Gasoline)	13,466	433,201.42
Total	—	3,072,947.39
% of County		0.021%
Note: Includes fuel use associated with on-road vehicles and off-road equipment. Conservatively assumes electricity use for the pumping of water would be from non-renewable sources. kWh=Kilowatt Hour Refer to Appendix G for modeling assumptions and results. Source: Appendix G, Energy Technical Report 2021, and California Energy Commission (CEC) 2022		

Operation

Operational energy consumption in the form of electricity would occur as a result of solar panel maintenance and the Operation and Maintenance Building(s). However, electricity use would be offset by the power produced by the solar panels. In addition, the use of transportation fuel would be minimal and is predominately associated with worker commute trips and occasional panel washing activities. Energy use associated with long-term operational activities is summarized in **Table 4.6-3: Project Operational Energy Usage**. As shown, operation of the project would consume approximately 2,186 gallons of gasoline, 270 gallons of diesel and 80,409 kWh of electricity. This is 0.00054 percent of the total electricity consumption in Kern County in 2020.

TABLE 4.6-3: PROJECT OPERATIONAL ENERGY USAGE

Source	Fuel Consumption (gallons)	Energy Use (kWh)
Kern County (2020)		14,965,776,318
Operation:		
Off-Road Equipment Fuel (Diesel)	270	10,084.54
On-Road Vehicle Fuel (Gasoline)	2,186	70,325.08
Annual Energy Consumed	—	80,409.62
Percent of County		0.00054%
Annual Renewable Energy Produced	—	180,035,538.6
New Renewable Energy Produced	—	179,955,129
Note: Includes fuel use associated with on-road vehicles and off-road equipment. kWh=Kilowatt Hour Refer to Appendix G for modeling assumptions and results. Source: Appendix G, Energy Technical Report, 2021		

Total annual electricity from a 60 MW from a renewable solar energy facility is expected to produce approximately 180,035,538.6 kWh of electricity generated per year, which more than offsets the energy consumed annually to operate the project (as shown in **Table 4.6-3**). This production is anticipated to remain relatively constant throughout operation of the project. This electricity generation would assist State investor-owned utilities in meeting their obligations under State RPS guidelines by providing a renewable energy alternative to the utilities' existing power mix. In addition, operation of the project would not result in any natural gas consumption on the site. Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of electricity or natural gas, and impacts would be less than significant.

As shown in **Table 4.6-3: Project Operational Energy Usage**, the project operation would result in consume an estimated 270 gallons of diesel fuel and 2,186 gallons of gasoline per year. In total, operation of the proposed project would consume the equivalent of approximately 80,409.62 kWh per year, representing a fraction of a percent of the County's electricity use. Natural gas would not be used during long-term operations. As stated in Section 4.15, *Transportation and Traffic*, trips to the project site would be minimal and panel cleaning would happen periodically. Based on the minimal number of trips, the negligible fuel use, and the cleaning of panels on an as-needed basis, the project would not result in wasteful, inefficient, or unnecessary consumption of transportation fuels. Overall, impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the gen-tie line and access road for the transport of renewable energy is not expected to result in the wasteful, inefficient or unnecessary consumption of energy.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The construction and operation of the PG&E interconnection facilities at the Arco Substation for the transport of renewable energy is not expected to result the wasteful, inefficient or unnecessary consumption of energy. Mitigation Measures

Implement Mitigation Measure MM 4.3-1 as provided in Section 4.3, *Air Quality*, of this EIR.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM-4.3-1, impacts would be less than significant. Impacts would be less than significant for the interconnection to the Arco Substation and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Construction

Construction equipment would comply with federal, State, and regional requirements where applicable. With respect to truck fleet operators, the USEPA and NHSTA have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle

type. USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. The energy modeling for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations regarding heavy-duty truck idling limits of five minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy.

Operation

In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 33 percent RPS by 2020 and 50 percent by 2030. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and statewide emissions of GHGs over the expected life of the project. The reduction in GHG emissions are a direct result of increasing the share of renewable energy available to investor-owned utilities required to meet RPS. The project directly aligns with the goals of RPS by generating 60 MW of renewable electricity annually.

Furthermore, as the project would have an electric power generating capacity of approximately 60 megawatts MW (alternating current or “AC”) of renewable electrical energy and up to 55 MW of a Battery Energy Storage System (BESS), the project would be consistent with the Attorney General’s recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General’s Recommended Measure to “Install solar and wind power systems, solar and tank less hot water heaters, and energy-efficient heating ventilation and air conditioning.” Therefore, the project would be compliant with the Attorney General’s Recommended Measure regarding renewable energy. Because the project is below regional regulatory thresholds and could result in a reduction of GHG emissions, no mitigation measures are required.

With regard to the Operations and Maintenance Building(s) proposed on the project site, the building(s) would be subject to the Building Energy Efficiency Standards as required by the California Code of Regulations, Title 24, Part 6. The Building Energy Efficiency Standards are intended to save energy, increase electricity supply reliability, and avoid the need to construct new power plants. Pursuant to the California Building Standards Code and the Energy Efficiency Standards, the County would review the design components of the project’s energy conservation measures when the project’s building plans are submitted. These measures could include insulation; use of energy-efficient heating, ventilation, and air conditioning equipment (HVAC); solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; reclamation of heat rejection from refrigeration equipment to generate hot water; incorporation of skylights; and other measures. The project would also be subject to CALGreen, which requires 65 percent construction solid waste diversion.

Overall, because the main objectives of the project are to assist California Investor-Owned utilities in meeting their obligations under California’s RPS Program and assist California in meeting the GHG

emissions reduction goal of 1990 level GHG emissions by 2020, as required by AB 32, and the future reduction goal of 40 percent below 1990 levels by 2030, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan, as well as, applicable federal, state and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2020 and 2030 RPS. Therefore, this impact would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the connection to Arco Substation for the transport of renewable energy would contribute to the State of California's ability to meet its renewable energy generation and GHG emission reduction goals. Impacts would be less than significant in this regard.

The construction and operation of the PG&E interconnection facilities at the Arco Substation for the transport of renewable energy would contribute to the State of California's ability to meet its renewable energy generation and GHG emission reduction goals.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impacts would be less than significant for the interconnection to the Arco Substation no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts occur when the incremental effects of a project are significant when combined with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area. As presented in Chapter 3, *Project Description*, of this EIR, there are 3 related projects located within the vicinity of the project site (2 within a 1-mile radius of the project site and 1 within a 6-mile radius of the project site). The geographic context for the analysis of cumulative impacts on electricity is PG&E's service area because the project and related projects are located within the service boundaries of PG&E.

Cumulative projects in the project area listed in **Table 3-4: Cumulative Projects List**, one of the projects listed is also a utility-scale solar power generation facility. The nature of this project is such that, like the project, they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by 2020. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Scoping Plan relies on achievement of the RPS target of 60 percent of California's energy coming from renewable sources by 2030 and 100 percent renewable sources by 2045. The project and other similar projects are essential to achieving the RPS.

The main contribution of energy consumption from the project would be from construction equipment usage, haul truck trips, and employee trips during the construction phase and panel washing activities, maintenance trips, and employee trips during project operation of the project as well as electricity used for

the Operations and Maintenance Building. The project's emissions would, therefore, contribute to the increase in emissions in the transportation sector as well as electricity generation sector. Construction emissions would be finite and temporary and would cease at the end of construction activities.

As project construction could result in a contribution to cumulative energy consumption in California, the project would implement Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR, which would require the use of energy-efficient and alternatively-fueled equipment during project construction. In addition, operation of the project would offset emissions from the electricity generation sector estimated at approximately 60 MW of renewable electricity annually. Overall, the project clearly would not contribute to cumulative energy consumption in California because operation of the project would provide electric power with negligible operational energy consumption over the long term when compared to traditional fossil-fueled generation technologies. Thus, the project would not have a cumulatively considerable impact on energy consumption, would not conflict with any renewable energy plans, and cumulative impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The construction and operation of the connection to Arco Substation for the transport of renewable energy is not expected to result the wasteful, inefficient or unnecessary consumption of energy. The construction and operation of the Arco Substation gen-tie line for the transport of renewable energy would also contribute to the State of California's ability to meet its renewable energy generation and GHG emission reduction goals.

Mitigation Measures

Implement Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.3-1, impacts would be less than significant.

Cumulative impacts would be less than significant for the interconnection to the Arco Substation with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Section 4.7

Geology and Soils

4.7.1 Introduction

This section of the EIR describes the geologic and soil characteristics of the project site and potential geology and soils impacts associated with construction and operation of the project and mitigation measures that would reduce these impacts, if applicable. The analysis in this section is largely based on the *Geotechnical Engineering Investigation Report* (Appendix H-1; BSK Associates 2021), and the *Paleontological Inventory Report* (Appendix H-2); Surf to Snow Environmental Resource Management, Inc (S2S), 2021) prepared for the project.

4.7.2 Environmental Setting

Regional Geologic Setting

The project site is located in Great Valley geomorphic province. The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago). Great oil fields have been found in southernmost San Joaquin Valley and along anticlinal uplifts on its southwestern margin. In the Sacramento Valley, the Sutter Buttes, the remnants of an isolated Pliocene volcano, rise above the valley floor. The San Andreas Fault is the master fault of an intricate fault network cutting through the California coastal region; the fault extends from northern California to the San Bernardino area of southern California (SCEDC, 2022). None of the project sites are intersected by any known faults but they are located in a region considered seismically active.

Paleontological Setting

Paleontological resources are the mineralized (fossilized) remains of prehistoric plants and animals and the mineralized impressions (trace fossils) left as indirect evidence of the form and activity of such organisms. These resources are located within sedimentary rocks or alluvium and are considered to be nonrenewable.

As documented in the Paleontological Resources Technical report, geologic mapping and results of the field survey indicate that the project area is underlain by low paleontological potential (PFYC 2) previously disturbed sediments and Holocene-age young alluvium (Qa); moderate potential (PFYC 3) Pleistocene-age older alluvium (Qoa); and high potential (PFYC 4) late Pliocene-age San Joaquin Formation (Tsj) and Pliocene-age Etchegoin Formation (Te). Also mapped within the project vicinity, within the half-mile buffer, is high potential (PFYC 4) Pleistocene- to late Pliocene-age Tulare Formation (QTt). This unit may be impacted at depth beneath younger units within the project area and is, therefore, included in the analysis. According to the record searches, there are no previously recorded fossil localities within the project area. However, there are several fossil localities recorded within the project vicinity and other areas of California from sediments similar to those mapped within the project area. The field survey resulted in the discovery

of two new non-significant fossil localities, including invertebrate shells, molds, and casts, that were documented from late Pliocene-age San Joaquin Formation (Tsj) and Pliocene-age Etchegoin Formation (Te) sediments.

Existing Paleontological Resources

The paleontological resources inventory conducted included a geologic map review, a literature search, a record search conducted by the National History Museum of Los Angeles County (LACM)) LACM, a field survey. The geologic map and literature review indicates the project site is largely underlain by Holocene- age young alluvium (Qa), Pleistocene-age older alluvium (Qoa), late Pliocene-age San Joaquin Formation (Tsj), and Pliocene-age Etchegoin Formation (Te).

Paleo Solutions requested paleontological searches of records maintained by the LACM. The museum responded on October 23, 2020 that no vertebrate fossil localities are recorded from within the project area, although there are several localities recorded from within the vicinity from sediments similar to those that underlie the project. Information on those localities can be found in Appendix H-2 of this EIR.

Local Geologic Setting

Soils and Topography

The project area is situated in the San Joaquin Valley. The Great Valley separates the Sierra Nevada and the Coast Ranges, located to the east and west, respectively; it is bounded on the south by the Transverse Ranges; and it is drained by both the Sacramento and San Joaquin rivers. The Great Valley terrain is mostly flat and monotonous, and elevation variances are minimal with an average surface elevation of 10 meters above sea level in Sacramento and 120 meters above sea level in Bakersfield. There are several interludes in the synclinal structure, and these include thrust faults, folds, and an isolated volcanic center. Throughout the entire Great Valley, there are two distinct topographic breaks, including the Sutter Buttes located near Marysville in the Sacramento Valley and the Kettleman Hills located in and south of Coalinga along the western margin of the San Joaquin Valley. The Sutter Buttes, formed by the only volcano in the Great Valley, have a radial structure covering nearly 25 square kilometers. They comprise rhyolitic and andesitic domes surrounded by uplifted and weathered sedimentary rock units as well as pyroclastic flow deposits, and peak elevations of the central dome structures are approximately 700 meters above the valley floor. The Kettleman Hills are an elongated dome that is the surface expression of relatively young anticlinal structures, which are the largest of a series of folds in the San Joaquin Valley region. The hills are approximately 5 miles wide and span 30 miles from Coalinga, where peak elevations are approximately 1,476 feet above the valley floor, to Avenal, where the hills finally descend into the valley floor.

Elevations across the 640-acre project site range from approximately 462 feet above mean sea level in the southwest corner of the project site to approximately 584 feet above mean sea level in the northeast corner of the project site. Based on the Geotechnical Engineering Investigation Report subsurface material in the proposed substation location generally consists of silty and poorly graded sands to a maximum depth of exploration (21.5 to 36.5 feet bgs). Subsurface material in the proposed array area generally consists of hard sandy clay in the triangle shaped area on the southwest side and cemented silty and clayey sands in the remaining areas, both to a maximum depth of exploration (6.5 to 21.5 feet bgs).

On-Site Soils

Based on the U.S. Department of Agriculture Web Soil Survey the two main soil types for the project site would be composed of the Delgado sandy loam and Kimberlina sandy loam. **Table 4.7- 1: Project Soil Types**, provides of summary of the project site soil types and their characteristics. Other soils located on the site would include: Bitterwater sandy loam, 9% to 15% slopes; Granoso loam sand, 0% to 2% slopes; Carollo-Twisselman saline alkali association, 2% to 15% slopes; Kimberlina fine sandy loam, 2% to 5% slopes; and Twisselman clay, with 0% to 2% slopes, or 2% to 5% slopes. Most of the soils are deep, well drained to excessively drained sands or gravelly sands.

Three other soils, Delgado sandy loam, 5 to 15%, Kimberlina fine sandy loam, sandy substratum, and Kimberlina fine sandy loam, 0 to 2 percent, are located within the location of the proposed access road but are not located within an area that would be used for solar generation or other project structures such as the BESS. Additional soils information is provided in Chapter **4.10: Hydrology**.

TABLE 4.7-1: PROJECT SOIL TYPES

Map Unit Symbol	Soil Map Description	Hydrologic Soil Group	Drainage Class	Acres and Percent of Project Site	
				Acres	Percent
144	Delgado sandy loam, 5 to 30 percent slopes	D	Somewhat excessively drained	245.1 acre	38.0%
175	Kimberlina sandy loam, 2 to 5 percent slopes	A	Well drained	279.5 acres	42.0%
115	Bitterwater Sandy loam, 9 to 15 percent slopes	A	Well drained	38.8 acre	6.0%
125	Granoso loamy sand, 0 to 2 percent slopes	A	Somewhat excessively drained	6.7 acres	1.0%
129	Carollo-Twisselman saline alkali association, 2 to 15 percent slopes	D	Well drained	15.8 acres	2.5%
174	Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17	A	Well drained	49.3 acres	7.6%
175	Kimberlina fine sandy loam, 0 to 2 percent slopes	A	Well drained	279.5	42.0%
235	Twisselman clay, 0 to 2 percent slopes	C	Well drained	9.6 acres	1.5%
236	Twisselman clay, 2 to 5 percent slopes	C	Well drained	8.9 acres	1.4%

SOURCE: United States Department of Agriculture (USDA), and Natural Resources Conservation Service, 2022.

Note: Acres and percentage of project site is approximate, does not include access road or substation, and is based on NRSC mapping

Groundwater

The project site is located in the Tulare Lake Hydrologic Region, and specifically in the San Joaquin Valley Groundwater Basin within the Kern County Subbasin. The Kern County Subbasin is primarily fed from

stream seepage along the eastern subbasin and the Kern River; recharge of applied irrigation water, however, is the largest contributor. Total water storage within the Kern County subbasin is reported to be in the range of 40 million acre-feet. The Kern County Subbasin covers about 3,040 square miles and is bounded on the north by the Kern County line and the Tule Groundwater subbasin, on the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi mountains, and on the southwest and west by the marine sediments of the San Emigdio Mountains and Coast Ranges. Groundwater has been and is an important resource within the subbasin given limits on the available local and imported surface water supply.

Groundwater was not encountered at the Site on December 7 through 9, 2020. Based on the groundwater elevation data from the California Department of Water Resources (DWR), the historic high groundwater depth in the vicinity was recorded to be greater than 100 feet bgs (Idemitsu Renewables, 2021).

Fault Rupture

Ground surface rupture along an earthquake fault may cause damage to aboveground infrastructure and other features and occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture is considered to most likely occur along the identified traces of active faults (Bryant and Hart 2007). Active faults are defined as faults with evidence of displacement in the last 11,000 years. As described above, there are no active faults that intersect the project site nor are any located within the immediate vicinity. The closest fault-rupture hazard zone is associated with the 1952 earthquake fractures on the east side of the Site and the Wheeler Ridge fault zone 6.5 miles south of the site.

Ground Shaking

Faults located within the project site vicinity have the potential to cause ground shaking to occur on the project site; the magnitude of ground shaking experienced onsite is dependent on the distance to causative faults and the earthquake magnitude (or measure of the amount of energy released during an earthquake event). **Table 4.7-2: *Historic Earthquakes in Project Area Vicinity***, shows some of the significant historical earthquakes that have occurred in the region and their magnitude.

TABLE 4.7-2: HISTORIC EARTHQUAKES IN PROJECT AREA VICINITY

Earthquake (Year)	Approximate Distance to Site (miles)	Earthquake Magnitude
Parkfield (1966)	37	6
Wheeler Ridge (1993)	55	5.2
Kern County (1952)	61	5.8

SOURCE: SCEDC, 2022.

Landslides

The project site is relatively flat with gentle slopes and is not expected to have any landslide potential.

Liquefaction and Lateral Spreading

Liquefaction is a type of ground failure resulting from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength, lateral spreading, ground oscillation, and loss of

bearing strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The susceptibility to liquefaction also is a function of depth, density, groundwater level, and magnitude of the earthquake and ground shaking. For liquefaction to occur, the soil must be saturated (i.e., shallow groundwater) and be relatively loose. Liquefaction more often occurs in areas underlain by young alluvium, where the groundwater table is higher than 50 feet below ground surface. Based on the Kern County General Plan Safety Element the project site is not within a designated zone of shallow groundwater. In addition, because the depth to groundwater encountered during the seismic hazard investigation is greater than 100 feet, and because the project is not located within or near a Seismic Hazard Zone (BSK, 2021), the potential for liquefaction at the project site is considered low.

Soil Erosion

Soil erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind and subsurface water flow. Excessive soil erosion can eventually lead to damage of building foundations and roadways. In general, areas that are most susceptible to erosion are those that would be exposed during the construction phase when earthwork activities disturb soils and require temporary stockpiling. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or slope protection, however changes in drainage patterns can also cause areas to be susceptible to the effects of erosion. There are many factors contributing to soil erosion. Soils containing high silt content have the highest soil erodibility since they are easily detached, tend to crust and produce high rates of runoff. Coarse textured soils, or sandy soils, are easily detached but typically do not produce a lot of runoff, so they have low soil erodibility.

Subsidence

Subsidence is the sinking of the ground surface; there are four types of subsidence that are currently occurring within Kern County. Tectonic subsidence refers to the long-term slow sinking of the land surface. Subsidence can also occur naturally when moisture-deficient soils are exposed to water, which causes collapse. Subsidence has also been caused by human activities including the extraction of oil and gas and the withdrawal of groundwater. Specific areas identified as experiencing subsidence within the County include the San Joaquin Valley, a large area south of Bakersfield and parts of the California Aqueduct (Kern County, 2009).

Soil Collapse

Collapsible soils consist of loose, dry, low-density materials that collapse, compact and change in settlement under the addition of water or excessive loading, often resulting in severe damage to structures. More specifically, collapse occurs when soil is saturated and the soil fabric cannot support the weight of the overburden or structures. The maximum load that such soils can support is the difference between the saturation collapse and overburden pressures. These soils generally consist of 50 to 90% silt particles, and sandy, silty, and clayey types have been recognized, with most falling into the silty category (Science Direct, 2005). Collapsible soils occur in the western United States most commonly in areas with relatively young deposits in alluvial fans, debris flow sediments, and loess (wind-blown sediment) deposits.

Expansive Soils

Expansive soils are characterized by their potential “shrink-swell” behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the process of wetting and drying. Expansive soils contain clay types such as smectite, bentonite, montmorillonite, beidellite, vermiculite, and others are known to expand with changes in moisture content. These soils are capable of absorbing water in a manner that results in volumetric changes and the higher the percentage of expansive minerals present in near surface soils, the higher the potential for significant expansion. The greatest effects occur when there are significant or repeated moisture content changes the change in volume can exert enough force on a building or other structure to cause cracked foundations, floors, walls, and roadways.

4.7.3 Regulatory Setting

Geologic resources and geotechnical hazards are governed primarily by local jurisdictions. The conservation elements and seismic safety elements of city and county general plans contain policies for the protection of geologic features and avoidance of hazards. Relevant and potentially relevant statutes, regulations, and policies are discussed below.

Federal

Clean Water Act (Erosion Control)

The Federal Clean Water Act (CWA) (33 USC 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to jurisdictional waters of the United States. Such discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). The project site is within the jurisdiction of the Central Valley RWQCB. For purposes of regulating non-point source storm water discharges, projects that disturb one or more acres may be required to obtain NPDES coverage under the Construction General Permit if the project is deemed to discharge to a water of the United States. Because the project is in a terminal drainage area of Kern County (i.e., does not drain to a waters of the United States), NPDES coverage is not expected to be required as discussed further below.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMPs) to regulate stormwater runoff, including measures to prevent soil erosion. Requirements of the CWA and associated SWPPP are described in further detail in Section 4.10, *Hydrology and Water Quality*.

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 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 and reduction program.” To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in

November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the project would be required to adhere.

Paleontological Resources

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally owned or federally managed lands or involves a federal agency license, permit, approval, or funding. The first of these is the Antiquities Act of 1906 (54 U.S.C. 320301– 320303 and 18 U.S.C. 1866(b)), which calls for protection of historic landmarks, historic and prehistoric structures, as well as other objects of historic or scientific interest on federally administered lands, the latter of which would include fossils. The Antiquities Act both establishes a permit system for the disturbance of any object of antiquity on federal land and also sets criminal sanctions for violation of these requirements. The Antiquities Act was extended to specifically apply to paleontological resources by the Federal-Aid Highways Act of 1958. More recent federal statutes that address the preservation of paleontological resources include the National Environmental Policy Act, which requires the consideration of important natural aspects of national heritage when assessing the environmental impacts of a project (P.L. 91-190, 31 Stat. 852, 42 U.S.C. 4321–4327). The Federal Land Policy Management Act of 1976 (P.L. 94-579; 90 Stat. 2743, U.S.C. 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values, while Title 40 Code of Federal Regulations Section 1508.2 identifies paleontological resources as a subset of scientific resources. The Paleontological Resources Preservation Act (Title VI, Subtitle D of the Omnibus Land Management Act of 2009) is the primary piece of federal legislation.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act offers provisions of paleontological resources identified on federal, Native American, or state lands and guidance for their management and protection and promotes public awareness and scientific education regarding vertebrate fossils. The law also requires federal agencies to develop plans for inventory, collection, and monitoring of paleontological resources and establishes stronger criminal and civil penalties for the removal of scientifically significant fossils on federal lands

State

The Alquist-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act), regulates the development and construction of buildings intended for human occupancy to avoid hazards associated with surface fault rupture. In accordance with this law, the California Geological Survey maps active faults and designates Earthquake Fault Zones along mapped faults. This act groups faults into categories (i.e., active, potentially active, or inactive). Historic and Holocene faults are considered active,

Late Quaternary and Quaternary faults are considered potentially active, and pre-Quaternary faults are considered inactive. These classifications are qualified by conditions. For example, a fault must be shown to be “sufficiently active” and “well defined” through detailed site-specific geologic explorations to determine whether building setbacks should be established. Any project that involves the construction of buildings or structures for human occupancy, such as an operations and maintenance building, is subject to review under the Alquist-Priolo Earthquake Fault Zoning Act, and any structures for human occupancy must be located at least 50 feet from any active fault.

The Seismic Hazards Mapping Act of 1990

In accordance with PRC Chapter 7.8, Division 2, the California Geologic Survey (CGS) is directed to delineate seismic hazard zones. The purpose of the act is to reduce the threat to public health and safety and minimize the loss of life and property by identifying and mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by the California Geological Survey in their land use planning and permitting processes. In accordance with the Seismic Hazards Mapping Act, site-specific geotechnical investigations must be performed prior to permitting most urban development projects within seismic hazard zones.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California.

The 2019 edition of the CBC is based on the 2018 IBC published by the International Code Council. The code is updated triennially, and the 2019 edition of the CBC was published by the California Building Standards Commission in 2019 and took effect starting January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-10, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general structural design and includes means for determining earthquake loads¹ as well as other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage.

¹ A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Chapter 18 also describes analysis of expansive soils and the determination of the depth to groundwater table. Expansive soils are defined in the CBC as follows:

1803.5.3 Expansive Soil. In areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1,2 and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity index (PI) of 15 or greater, determined in accordance with ASTM D 4318.
2. More than 10 percent of the soil particles pass a No. 200 sieve (75 micrometers), determined in accordance with ASTM D 422.
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422.
4. Expansion index greater than 20, determined in accordance with ASTM D 4829.

Public Resources Code Section 5097.5 and Section 30244

Other state requirements for paleontological resource management are included in Public Resources Code (PRC) Section 5097.5 and Section 30244; of these two PRC sections, only the latter (Section 30244) applies to the project as the former (Section 5097.5) is only applicable to projects on public land. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to archaeological or paleontological resources.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate Regional Water Quality and Control Board (RWQCB). Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under CWA Section 401.

State Regional Water Quality Control Board, Stormwater General Construction Permit

The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs in the major watersheds of the state. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters.

In 1999, the state adopted the NPDES General Permit for Stormwater Discharges Associated with Construction Activities (Construction Activities General Permit) (SWRCB Order No. 2012-0006-DWQ, NPDES No. CAS000002). The General Construction Permit generally requires that construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development, apply for coverage for discharges under the General Construction Permit by submitting a Notice of Intent for coverage, developing a stormwater pollution prevention plan (SWPPP), and implementing best management practices to address construction site pollutants if the project is deemed to discharge into a water of the United States. However, as the project site is in a terminal drainage area of Kern County (e.g., does not drain to a waters of the United States), NPDES coverage is not expected to be required as described in further detail in Section 4.10, *Hydrology and Water Quality*.

The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list the best management practices (BMP) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. Enrollment under the General Construction Permit is through the Stormwater Multiple Application and Report Tracking System. Additionally, the SWRCB is responsible for implementing the CWA and issues NPDES permits to cities and counties through the individual regional boards.

Local

Kern County General Plan

Construction and operation of the solar facility would be subject to all applicable policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to geology and soils. The policies, goals, and implementation measures

in the Kern County General Plan related to geology and soils that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. Chapter 1. Land Use, Conservation, and Open Space Element

1.3 Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

Policy

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

Implementation Measures

Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.

Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measure

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Chapter 4. Safety Element

4.1 Introduction

Goal

Goal 1: Minimize injuries and loss of life and reduce property damage.

4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Policy

Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Implementation Measures

Measure B: Require geological and soils engineering investigations in identifying significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.

Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

4.5 Landslides, Subsidence, Seiche, and Liquefaction

Policies

Policy 1: Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

Kern County Code of Building Regulations (Title 17 of the Ordinance code of Kern County)

All construction in Kern County is required to conform to the Kern County Building Code (Chapter 17.08, Building Code, of the Kern County Code of Regulations). Kern County has adopted the CBC, 2016 Edition, with some modifications and amendments. The entire County is in Seismic Zone 4, a designation previously used in the Uniform Building Code (UBC) to denote the areas of highest risk for earthquake ground motion. California has an unreinforced masonry program that details seismic safety requirements for Zone 4. Seismic provisions associated with Seismic Zone 4 have been adopted (Kern County, 2017).

Chapter 17.28. Kern County Grading Code

The purpose of the Kern County Grading Code (Chapter 17.28, Building Code, of the Kern County Code of Regulations) sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction (Kern County, 2017). Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

Section 17.28.140. Erosion Control

- A. Slopes. The faces of cut-and-fill slopes shall be prepared and maintained to control erosion. This control may consist of effective planting. Protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.
- B. Other Devices. Where necessary, check dams, cribbing, riprap, or other devices or methods shall be employed to control erosion and provide safety.
- C. Temporary Devices. Temporary drainage and erosion control shall be provided as needed at the end of each workday during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Section 17.28.170. Grading Inspection

- A. General. All grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations and testing shall be provided by the civil engineer, soils engineer, and the engineering geologist retained to provide such services in accordance with Subsection 17.28.170(E) for engineered grading and as required by the building official for regular grading.
- B. Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade, and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.
- C. Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.
- D. Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock

excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

- E. Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this Code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the building official. In the event of changed conditions, the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.
- F. Building Official. The building official may inspect the project at the various stages of the work requiring approval to determine that adequate control is being exercised by the professional consultants.
- G. Notification of Noncompliance. If, in the course of fulfilling their responsibility under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official. Recommendations for corrective measures, if necessary, shall also be submitted.
- H. Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during the course of the work, the work shall be stopped until:
 - 1. The civil engineer, soils engineer, or engineering geologist has notified the building official in writing that they will no longer be responsible for the work and that a qualified replacement has been found who will assume responsibility.
 - 2. The replacement civil engineer, soils engineer, or engineering geologist notifies the building official in writing that they have agreed to accept responsibility for the work.

Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Public Works Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the applicant to provide background information on construction activities. Applicants must apply for the permit under one of the following four conditions:

- 1. All storm water is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.

2. All storm water runoff is not retained on site but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.
3. All storm water runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.
4. Construction activity is between one to five acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

Kern County Public Health Services Onsite Wastewater Treatment System Permitting

The Kern County Public Health Services Department is responsible for permitting, inspecting, and approving onsite wastewater treatment systems, including septic tank wastewater disposal systems. The agency provides leach line requirements, seepage pit requirements, percolation testing standards, and other regulations for land development related to wastewater treatment systems.

4.7.4 Impacts and Mitigation Measures

Methodology

Potential significant impacts associated with the project site were identified based on a review of available online sources, the *Azalea Solar Geotechnical Engineering Investigation Report* (Appendix H- 1; BSK, 2021), the *Paleontological Inventory Report* (Appendix H-2, S2S, 2021), and existing literature including the Kern County General Plan. The Geotechnical Report presents findings, conclusions, and recommendations concerning development of the project based on an engineering analysis of geotechnical properties of the subsurface conditions and evaluation of the underlying soils.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on geology and soils.

A project would have a significant adverse effect on geology and soils if it would:

- a. 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;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction;
 - Landslides.

- b. Result in substantial soil erosion or the loss of topsoil;
- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater;
- f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Project Impacts

Impact 4.7-1: The project 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.

Primary fault rupture is ground deformation that occurs along the surface trace of the causative fault during an earthquake. Project construction is expected to employ up to approximately 500 workers over the course of approximately one year, which would include the construction of an O&M building. The O&M building would support a complement of five FTE. Thus, the proposed project would introduce structures and people to the project site (construction workers and periodic maintenance workers) and could expose people and structures to seismic risks. While the project site is located in the highly seismic southern California region, it is not located within or within close proximity to a State of California Alquist-Priolo Earthquake Fault Zone and there are no known faults located within the project site. The closest fault zone is associated with the 1952 earthquake fractures on the east side of the Site and the Wheeler Ridge fault zone 6.5 miles south of the site. The nearest Earthquake Fault Zone as delineated by the Alquist-Priolo Earthquake Fault Zoning Act, is associated with the San Andreas Fault and is approximately 18.5 miles southwest of the project sites (CDOC, 2010). Due to the distance from the nearest active fault to the project sites, the potential for surface fault rupture at the project sites is considered negligible.

In addition, construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2016 Edition (CCR Title 24), which incorporates substantially the same requirements as the International Building Code (2018 Edition), with some modification and amendments. Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with the project. Based on the absence of any known active faults that cross or come anywhere near the project site, and the project compliance with applicable ordinances of the Kern County Building Code, impacts related to fault rupture would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements in these areas do not

include any habitable structures and would be construction in accordance with all applicable building codes and earthquake safe designs. These areas are not within an Alquist Priolo zone and would not directly or indirect result in substantial adverse effects. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These facilities would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant and PG&E Interconnection Facilities.

Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.

As stated previously, the project sites are in a highly seismic region that could experience one or more substantive seismic events in the future. Depending on the magnitude, distance to the source, and duration of shaking, damage to the PV modules, O&M Building(s), or other ancillary facilities and injury to workers or visitors could result. However, because the proposed project would not establish a permanent on-site population beyond the approximate 5 full-time or part-time employees located at the O&M facility during operations and maintenance, damage to these on-site structures would not expose a substantial number of people to potential adverse effects due to strong seismic ground shaking. Prior to the issuance of grading permits, the project proponent would be required show that the project infrastructure was designed to withstand substantial ground shaking in accordance with all applicable ordinances of the Kern County Building Code (Chapter 17.08) and the current CBC.

A geotechnical study to evaluate soil conditions and geologic hazards on the project site was performed by a qualified geotechnical engineer. All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the report and according to the final design plans, which would be fully compliant with the seismic recommendations provided by the California-registered professional engineer in accordance with California and Kern County Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for buried metal. The final structural designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements would be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design would be submitted to the Kern County Planning and Natural Resources Department. Further, the facilities would be constructed in accordance with all applicable codes, which require property line and public roadway setbacks that would protect the general public and onsite staff from potential hazards associated with the facilities that could result from an earthquake. Adherence to the requirements of the Kern County Building Code, the CBC, the latest ASTM standards, and Mitigation Measure

MM 4.7- 1 would ensure that seismic hazards would be minimized; impacts related to ground shaking would be less than significant.

Should these operations be performed during or shortly following periods of inclement weather, unstable soil conditions may result in the soils exhibiting a “pumping” condition. This condition is caused by excess moisture in combination with moving construction equipment, resulting in saturation and zero air voids in the soil.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements in these areas do not include any habitable structures and would be construction in accordance with all applicable building codes and earthquake safe designs. Use of these areas for these project elements would not directly or indirect result in substantial adverse effects from ground shaking. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These facilities would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. PG&E’s best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to soil stability and seismic design. Impacts would be less than significant.

Mitigation Measures

- MM 4.7-1:** Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a final engineering design specific geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the Kern County Public Works Department for review and approval.
- a. The final geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following:
 - i. Location of fault traces and potential for surface rupture and groundshaking potential;
 - ii. Maximum considered earthquake and associated ground acceleration for design;
 - iii. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils;
 - iv. Stability of any existing or proposed cut-and-fill slopes;
 - v. Collapsible or expansive soils;
 - vi. Foundation material type;
 - vii. Potential for wind erosion, water erosion, sedimentation, and flooding;

- viii. Location and description of unprotected drainage that could be impacted by the proposed development; and,
 - ix. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground.
- b. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent shall not locate project facilities on or immediately adjacent to an active fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid sighting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed.
 - c. The final geotechnical report shall be submitted for review and approval by the Kern County Public Works Department. The Kern County Public Works Department shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided. Final design requirements shall also be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction.

Seismically induced liquefaction occurs when loose, water-saturated sediments of relatively low density are subjected to cyclic shaking that causes soils to lose strength or stiffness because of increased pore water pressure. Liquefaction generally occurs when the depth to groundwater is less than 50 feet. Zones of Required Investigation referred to as "Seismic Hazard Zones" in CCR Article 10, Section 3722, are areas shown on Seismic Hazard Zone Maps where Site investigations are required to determine the need for mitigation of potential liquefaction induced landslide ground displacements.

During performance of the geotechnical report, (December 7 through 9, 2020) ground water was not encountered and based information from the California Department of Water Resources (DWR), the historic high groundwater depth in the vicinity was recorded to be greater than 100 feet below ground surface (bgs). While it is noted that the groundwater level may fluctuate both seasonally and from year to year due to variations in rainfall, temperature, pumping from wells and possibly as the result of other factors such as irrigation, that were not evident at the time of our investigation, liquefaction hazard potential is considered to be low. Furthermore, the project is not located within a current, mapped California Liquefaction Hazard Zone. Structures constructed as part of the project would be required by

state law to be constructed in accordance with all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Building code requirements may include, but are not limited to, ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. Adherence to all applicable regulations would avoid any potential impacts to structures resulting from liquefaction at the project.

Thus, the potential for the project to be affected by liquefaction or exacerbate the potential for liquefaction is low. Impacts would be less than significant, and mitigation is not required. Therefore, impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements in these areas do not include any habitable structures and would be construction in accordance with all applicable building codes and earthquake safe designs. Use of these areas for these project elements would not directly or indirect result in substantial adverse effects from liquefaction. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These facilities would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to soil stability and seismic design. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

Impact 4.7-4: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides.

Zones of Required Investigation referred to as "Seismic Hazard Zones" in CCR Article 10, Section 3722, are areas shown on Seismic Hazard Zone Maps where Site investigations are required to determine the need for mitigation of potential earthquake-induced landslide ground displacements. The project is located in a gently sloping area and does not contain any steep slopes and is not adjacent to an area with steep slopes that could affect the project site. The project would not include any habitable structures, and the potential hazard due to landslides from adjacent properties to affect the site is not anticipated. There are no mapped areas that have Seismic Hazard Zones in the project area and the potential for the project to be affected by

landslides or exacerbate the potential for landslides is low. Impacts would be less than significant, and mitigation is not required.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements in these areas do not include any areas that would be susceptible to landslides. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These facilities would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to soil stability and seismic design. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

Impact 4.7-5: The project would result in substantial soil erosion or the loss of topsoil.

Construction of the project sites would involve earth-disturbing activities that could expose soils to the effects of wind or water erosion. Although the project site consists of relatively flat topography and would not involve substantive cut and fill operations, earthmoving and construction activities could loosen soil, and the removal of existing minimal vegetation could contribute to soil loss and erosion. To help contain runoff, and in accordance with the requirements of the Kern County National Pollution Discharge Elimination System (NPDES) Program a storm water pollution prevention plan (SWPPP) would be prepared and implemented per. The SWPPP would include various types of best management practices (BMPs) to control erosion and minimize the movement of soil and runoff to off-site areas. The project would include temporary BMPs that would be installed and maintained during construction. Temporary BMPs could include but not be limited use of silt fence, straw waddles, revegetation, etc. and other erosion control measures required by the Kern County Grading Code (Chapter 17.28.140). Site specific measures would be incorporated into the SWPPP as required by Mitigation Measure MM 4.10-1. Also, per Mitigation Measure MM 4.7-1, the project would be required to make all grading improvements in accordance with the recommendations in the engineering report and pursuant to the Kern County Grading Code (Section 17.28.070) to the Kern County Engineering and Survey Services Department in order to obtain required grading permits. Compliance with MM 4.7-1 would ensure that excessive grading does not occur. As a

result, project construction would have less-than-significant impacts related to erosion with implementation of Mitigation Measures MM 4.7-1 and MM 4.10-1.

Project operations would include the periodic cleaning of the panels with water; however, this is not expected to result in soil erosion because infrequency of these activities and the limited volumes of water involved; water is anticipated to infiltrate into the ground and not generate substantial erosion or soil loss. Project operations would not entail ground disturbance of area which has not previously been subjected to disturbance. As a result, project operation would have a less than significant impact with relation to soil erosion.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements would be in areas that are flat and not susceptible to substantial erosion. In addition, construction in these areas would implement the same mitigation as discussed above and would be subject to the same SWPPP and BMPs. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These facilities would not result in substantial soil erosion or the loss of topsoil. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to soil stability and seismic design. Impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 and MM 4.10-1 see Section 4.10: *Hydrology and Water Quality*, of this EIR, for full mitigation measure text).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 and 4.10-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

Impact 4.7-6: The project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

As stated above, the proposed project would result in no impact related to landslides. The geotechnical report prepared for the EIR concluded that the liquefaction potential on the project site is low, largely based on the groundwater depth in the area which is reportedly greater than 100 feet below ground surface. As a result, combined with the relatively flat topography the low liquefaction potential indicates a low potential for lateral spreading.

Four (4) Collapse Potential Tests were performed as part of the geotechnical report on relatively undisturbed soil samples to evaluate collapse potential characteristics and were done in general accordance with ASTM D 5333. The results of the testing are shown in **Table 4.7-3: Collapse Potential of Project Site**, below.

TABLE 4.7-3: COLLAPSE POTENTIAL OF SITE SOILS.

Sample Location	Sample Description	Dry Density (pcf)	Initial Moisture	Collapse Potential (at 2,000 psf)
Area B-3 at 10'	Poorly graded sand: brown, moist, fine to coarse graded	97.3	6.9%	2.30%
Area 2 B-16 at 11'	Silty sand: pale olive, moist, fine grained	99.6	8.9%	1.25%
Area 3 B-26 at 6'	Poorly graded sand w/silt: olive, slightly moist, fine to medium grained	98.3	7.6%	0.35%
Area 4 B-30 at 5' ¹	Silty sand: brown, moist, fine to medium grained	102.3	10.7%	0.05% (expansion potential)

Notes: Area 4 was evaluated for both expansion and collapse potential.

SOURCE: BSK, Associates

Based on the values shown above, the potential for impacts from collapse would be low. Further, implementation of the recommended Mitigation Measures MM 4.7-1, impacts would be further reduced to less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements in these areas do not include any habitable structures and would be construction in accordance with all applicable building codes and earthquake safe designs. Use of these areas for these project elements would not exacerbate the potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to soil stability and seismic design. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These facilities would not exacerbate the potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to soil stability and seismic design. Impacts would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.7-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

Impact 4.7-7: The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

The shrink swell behavior of expansive soils can lead to damage of project improvements over time if not addressed appropriately prior to construction. Expansive soils generally consist of clay type soils such as smectite, bentonite, montmorillonite, beidellite, vermiculite, and others are known to expand with changes in moisture content. The geotechnical report conducted soil borings at a total of 36 locations. The surficial layers of soils and associated boring were as follows: Silty Sand (B-1, B-3, B-4, B-5 (with gravel), B-6, B-7, B-8, B-9, B-10, B-11, B-12, B-13, B-16, B-17, B-18, B-19, B-22, B-23, B-24, B-26, B-27, B-28, B-30, B-32, B-33, B-34, B-35); Poorly graded sand (B-2, B-20, B-21); Lean clay (B-14); Clayey sand (B-15, B-31); Sandy clay (B-25); Sandy silt (B-29); Clay (B-36).

All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans would be fully compliant with the recommendations provided in the geotechnical report and in accordance with California and Kern County Building Code requirements. In addition, the proposed project could incorporate Mitigation Measure MM 4.7-1, which require specific conditions for soil excavation, grading, mixing and site preparation. Conformance with these requirements and other CBC requirements would reduce the low potential for the project to experience adverse effects from expansive soils. Impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements in these areas do not include any habitable structures and would be construction in accordance with all applicable building codes and earthquake safe designs. Use of these areas for these project elements would not create hazards from construction occurring in an area with expansive soils. Impacts would be less than significant.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These facilities would not exacerbate the potential for development on expansive soils. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to soil stability and seismic design. Impacts would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.7-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure 4.7-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

Impact 4.7-8: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.

As described in Chapter 3, Project Description, of this EIR, the project would not include use of a septic tank system for the O&M building. The project does not include adding septic tanks or alternative wastewater disposal systems. Portable toilets would be used during construction, operation and decommissioning activities; therefore, no impact would occur.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation and access road would not affect use of any area for septic or alternative wastewater disposal system.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to wastewater design. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project and the PG&E Interconnection Facilities.

Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, as defined in CEQA Guidelines Section 15064.

In general, for projects that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For projects that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also affected.

The LACM identified no vertebrate fossil localities recorded from within the project area. In addition, no significant fossils were observed during the field survey, although several non-significant invertebrate fossil localities were documented. The localities were observed within outcroppings and road cut spoils of late

Pliocene-age San Joaquin Formation (Tsj) and Pliocene-age Etchegoin Formation (Te), and fossils include bivalve shells, molds, and casts (S2S, 2021). While no fossils were observed within Pleistocene-age older alluvium (Qoa), these sediments were determined to be conducive to fossil preservation on the basis of their lithology. No fossils were collected during the field survey.

Although no known subsurface historical resources were identified within the project site, there is the potential for unknown subsurface cultural resources that qualify as historical resources to exist within the project site. As described above, the records search identified a number of known cultural resources within a 0.5-mile radius of the project site. Additionally, the project site is covered by Holocene alluvium, which has been deposited over the course of known human occupation in the region, possibly burying prehistoric archaeological sites that once existed on the surface. The site also contains Tulare Formation (QTt) (Pleistocene to Late Pliocene), San Joaquin Formation (Tsj) (Late Pliocene), and Etchegoin Formation (Te) (Pliocene), which are all considered to have a high paleontological potential.

In relation to paleontological resources, the loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. Should subsurface archaeological resources be present within the project site, they may qualify as historical resources pursuant to CEQA and could be subject to potential impacts as result of project implementation. Direct impacts to paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to a less-than-significant level through the implementation of paleontological mitigation.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. These improvements do not occur in areas that would be anticipated to contain paleontological resources.

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. PG&E's compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to paleontological resources. Impacts would be less than significant.

Mitigation Measures

- MM 4.7-2:** The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (SVP, 2010), to carry out all mitigation measures related to paleontological resources
- a. Prior to the start of any ground disturbing activities, the qualified paleontologist shall conduct a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A

copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form.

- b. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements.
- c. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.
- d. The project operator shall ensure all new employees who have not participated in earlier Paleontological Resources Sensitivity Trainings shall meet the provisions specified above.
- e. The Paleontological Resources Awareness Training Guides shall be kept available for all personnel to review and be familiar with as necessary.

MM 4.7-3: If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-2 and MM 4.7-3, impacts would be less than significant with mitigation. Impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

Impacts of the project would be considered cumulatively considerable if they would have the potential to combine with other past, present, or reasonably foreseeable projects to become significant. Cumulative projects listed in **Table 3-4: Cumulative Projects List**, would be subject to relatively similar seismic hazards as that of the proposed project. However, the effects of these projects are not of a nature to cause cumulatively significant effects from geologic impacts or on soils because such impacts are site specific and would only have the potential to combine with impacts of the project if they occurred in the same location as the project.

Development of the project, with implementation of the regulatory requirements and mitigation measures discussed above, would result in less-than-significant impacts related to exposing persons or structures to geology, soils, or seismic hazards including the projects potential to exacerbate any of those conditions. Although the entire region is a seismically active area, geologic and soil conditions vary widely within a

short distance, making the cumulative context for potential impacts resulting from exposing people and structures to related risks one that is more localized or even site-specific. Similar to the project, other projects in the area would be required to adhere to the same California and Kern County Building Codes which would reduce the risk to people and property to less-than-significant levels. While future seismic events cannot be predicted, adherence to all federal, State, and local programs, requirements and policies pertaining to building safety and construction would limit the potential for injury or damage to a less-than-significant level. Therefore, the project, combined with past, present, and other foreseeable development in the area, would not result in a cumulatively significant impact by exposing people or structures to risk related to geologic hazards, soils, and/or seismic conditions. Therefore, the project would result in less-than-significant cumulative impacts related to geology and soils.

Surficial deposits, namely erosion and sediment deposition, can be cumulative in nature, depending on the type and amount of development proposed in a given geographical area. The cumulative setting for soil erosion consists of existing, planned, proposed, and reasonably foreseeable land use conditions in the region. However, construction constraints are primarily based on specific sites within a proposed development and on the soil characteristics and topography of each site. Individual projects are required to comply with applicable codes, standards, and permitting requirements (e.g., preparation of a SWPPP) to mitigate erosion impacts. The proposed project's compliance with these codes, standards and permitting requirements are required by Mitigation Measures 4.10-1. Other cumulative scenario projects would be required to adhere to similar requirements, thereby minimizing cumulative scenario erosion impacts. Specifically, all planned projects in the vicinity of the project are subject to environmental review and would be required to conform to the Kern County General Plan and Building Code and would implement additional mitigation of seismic hazards to ensure soil stability, especially related to seismically induced erosion. With implementation of Mitigation Measure MM 4.7-1 through MM 4.7-3, the project would not contribute to any cumulative impacts for geologic, seismic hazards or related events. Cumulative impacts related to geology and soils are less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation. The access road would be extended northerly from the project site to King Road. The improvements in these areas do not include any habitable structures and would be construction in accordance with all applicable building codes and earthquake safe designs. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Use of these areas for these project elements would not exacerbate the potential for these project elements to result in a cumulative impact from geologic hazards or to paleontological impacts. Impacts would be less than significant.

Impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-3 and 4.10-1 would be required (see Section 4.10, Hydrology and Water Quality, of this EIR, for full mitigation measure text).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1, cumulative impacts would be less than significant. Cumulative impacts would be less than significant for the PG&E Interconnection Facilities, which would follow applicable regulatory standards, and no mitigation measures are required for the PG&E Interconnection Facilities.

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Section 4.8

Greenhouse Gas Emissions

4.8.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to greenhouse gases (GHGs) for the project. It also describes the impacts associated with GHGs that would result from implementation of the project, and, as necessary, mitigation measures that would reduce these impacts.

Information in this section is based primarily on the project's air quality technical report, *Azalea Solar Project Air Quality and Greenhouse Gas Emission Study* (S2S Management, 2021) located in Appendix C of this EIR. The impact assessment for the project is also based upon a review of relevant literature and technical reports that include, but are not limited to, information and guidelines by the California Air Resources Board (CARB), the United States Environmental Protection Agency (EPA), and the applicable provisions of CEQA.

4.8.2 Environmental Setting

GHGs and climate change are a cumulative global issue. CARB and the USEPA regulate GHG emissions within the State of California and the United States, respectively. While CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction. CARB has divided California into regional air basins. The project is located within the central valley in Kern County, approximately 28 miles northwest of the unincorporated community of Lost Hills, and 108 miles northwest of the City of Bakersfield in the northwest portion of unincorporated Kern County near the border with Kings County. The project site is in the which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD), and is located in the San Joaquin Valley Air Basin.

Greenhouse Gases

GHGs refer to gases that absorb and re-emit infrared radiation in the atmosphere. Many chemical compounds found in Earth's atmosphere act as GHGs, which allow sunlight to enter the atmosphere freely. When sunlight strikes Earth's surface, some of it is reflected back toward space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to Earth's surface should be about the same as the amount of energy radiated back into space, leaving the temperature of Earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide), while others are exclusively human-made (e.g., gases used for aerosols). The principal GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs), are listed below (USEPA, 2020).

- **Carbon dioxide:** CO₂ enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO₂ is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- **Methane:** CH₄ is emitted during the production and transport of coal, natural gas, and oil. CH₄ emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.
- **Nitrous oxide:** N₂O is emitted during agricultural and industrial activities and during combustion of fossil fuels and solid waste.
- **Fluorinated gases:** HFCs, PFCs, and SF₆ are synthetic, powerful climate-change gases emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in minute quantities, but because they are potent climate-change gases, they are sometimes referred to as high Global Warming Potential (GWP) gases.
- **Sulfur hexafluoride:** SF₆ is a colorless, odorless, nontoxic, nonflammable gas. SF₆ is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity, including equipment such as electrical circuit breakers, which may be used for the project. The California Climate Action Registry (Registry) lists SF₆ as a potential source of fugitive emissions from electrical transmission and distribution equipment. Fugitive emissions are unintentional leaks of GHGs from equipment such as joints, seals, and gaskets.

Because different GHGs have different GWPs and CO₂ is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO₂ equivalents (CO₂e). For example, SF₆ is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF₆, while comprising a small fraction of the total GHGs emitted annually worldwide, is a much more potent GHG with 22,800 times the GWP as CO₂. Therefore, an emission of 1 metric ton (MT) of SF₆ could be reported as an emission of 22,800 MT of CO₂e (IPCC, 2007). Large emissions sources are reported in million MT of CO₂e (MMT CO₂e).

Greenhouse Gas Emissions Inventories

California produced approximately 418.4 gross MMTCO₂e in 2019, which is below the State's GHG reduction target of 1990 level GHG emissions (i.e., 431 MMTCO₂e) by 2020. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for approximately 39.7 percent of total GHG emissions in the State. This sector was followed by the industrial sector at approximately 21.08 percent and the electric power sector (including both in-state and out-of-state sources) at approximately 14.1 percent (CARB, 2021). In 2014, CARB had projected that, unregulated, statewide GHG emissions for the year 2020 will be approximately 509 MMTCO₂e (CARB, 2014a). These projections represent the emissions that were anticipated in the absence of any GHG reduction actions. California GHG emissions by economic sector from 2001 to 2019 are summarized in **Table 4.8-1: California Greenhouse Gas Emissions (million metric tons CO₂e)**, including the percentages by sector for 2017. The most recent annual GHG emission inventory released by CARB is for year 2017, which was released August 12, 2019.

TABLE 4.8-1: CALIFORNIA GREENHOUSE GAS EMISSIONS (MILLION METRIC TONS CO₂E)

Emission Inventory Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	% of 2019 tonnage
Transportation	161.8	161.4	161.3	162.6	166.2	169.8	171.2	169.6	166.1	39.7%
Electricity Generation (In State)	42.6	53.7	51.4	52.1	50.9	42.2	38.2	38.5	37.2	8.9%
Electricity Generation (Imports)	46.6	44.4	40.0	36.8	33.9	26.4	23.9	24.6	21.7	5.2%
Commercial	15.5	15.3	15.2	14.4	14.6	15.4	15.3	15.6	15.9	3.8%
Industrial	89.4	88.9	91.7	92.5	90.3	89.0	88.8	89.2	88.2	21.08%
Residential	30.5	28.2	29.0	23.8	24.2	25.3	26.0	25.7	28.0	6.7%
Agriculture	34.4	35.5	33.8	34.7	33.5	33.3	32.5	32.7	31.8	7.60%
High Global Warming Potential	14.5	15.5	16.8	17.7	18.6	19.2	20.0	20.4	20.6	4.92%
Recycling and Waste	8.4	8.3	8.4	8.4	8.5	8.6	8.7	8.7	8.9	2.12%
Total Gross Emissions	443.7	451.2	447.6	443	440.7	429.2	424.6	425.0	418.4	100%

SOURCE: CARB, 2021.

Climate Change

GHGs are gases in the atmosphere that trap heat. The major concern with GHGs is that increases in GHG concentrations in the atmosphere are causing global climate change, which is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to GHGs from human activities, most in the world-wide scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases (i.e., global warming).

According to CARB, the potential impacts in California due to global climate change may include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems. (CARB, 2018). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC, 2001):

- Higher maximum temperatures and more hot days over nearly all land areas
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas
- Reduced diurnal temperature range over most land areas
- Increase of heat index over land areas
- More-intense precipitation events

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, ocean acidification (including coral bleaching), impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, the potential for substantial environmental, social, and economic consequences over the long-term may be great.

4.8.3 Regulatory Setting

Federal

Environmental Protection Agency

The principal air quality regulatory mechanism at the federal level is the Clean Air Act (CAA) and in particular, the 1990 amendments to the CAA and the National Ambient Air Quality Standards (NAAQS) that it establishes. The federal CAA does not specifically regulate GHG emissions; however, the U.S. Supreme Court has determined that GHGs are pollutants that can be regulated under the federal CAA. There are currently no federal regulations that set ambient air quality standards for GHGs.

EPA regulations applicable to the project include:

Federal Clean Air Act

The USEPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO₂ gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR[®] labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆). The Endangerment Finding was required before the USEPA could regulate GHG emissions under Section 202(a)(1) of the Clean Air Act. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks

On May 19, 2009, the federal government announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard jointly approved by the USEPA and the National Highway Traffic Safety Administration (NHTSA) applies to passenger cars and light-duty

trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy (CAFE) standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO₂ per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO₂ per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle. In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022–2025 (USEPA, 2018). In March 2020, the USEPA and NHTSA adopted the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule that would maintain the CAFE and CO₂ standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 mpg and 204 grams per mile for passenger cars and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. The proposal, if adopted, would also exclude CO₂-equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020 (USEPA and NHTSA, 2018).

Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines (USEPA and NHTSA, 2011). In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans and all types of sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (USEPA and NHTSA, 2016).

40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule

This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MTCO_{2e} emissions per year (USEPA, 2011). Additionally, reporting of emissions is required for owners of SF₆- and PFC-insulated equipment, when the total nameplate capacity of these insulating gases is above 17,280 pounds. The project would not be expected to trigger GHG reporting according to the rule; however, GHG emissions of the project are quantified in this EIR.

40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule

USEPA mandated to apply Prevention of Significant Deterioration (PSD) requirements to facilities whose stationary source CO_{2e} emissions exceed 75,000 tons per year (USEPA, 2010). The project would not be expected to trigger PSD permitting as required by this regulation; however, GHG emissions of the project are quantified in this EIR.

Fuel Efficiency Standards for Construction Equipment

The federal government sets fuel efficiency standards for non-road diesel engines that are used in construction equipment. The regulations, contained in 40 CFR Parts 1039, 1065, and 1068, include multiple tiers of emission standards. Most recently, the USEPA adopted a comprehensive national program to reduce emissions from non-road diesel engines by integrating engine and fuel controls as a system to gain the greatest reductions. To meet these Tier 4 emission standards, engine manufacturers will produce new engines with advanced control technologies (USEPA, 2004).

State

Executive Order S-1-07

Executive Order S-1-07 recognizes that the main source of GHG emissions in California is from the transportation sector, and establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. As a result of Executive Order S-1-07, CARB approved a proposed regulation to implement the Low Carbon Fuel Standard (LCFS) to reduce GHG emissions from the transportation sector in California by approximately 16 MMTCO_{2e} by 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that establishes performance standards that fuel producers and importers must meet each year beginning in 2011.

Executive Orders S-3-05 and B-30-15

Executive Order S-3-05 sets target dates to reduce statewide GHG emissions to historical levels, as follows:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order B-30-15 sets a target date of 2030 to reduce GHG emissions to 40 percent below 1990 levels. Executive Orders S-3-05 and B-30-15 are only applicable to "State agencies with jurisdiction over sources of greenhouse gas emissions" (Order 4-29-2015 Section 2), and Kern County is not a State agency. Furthermore, there is currently no implementation strategy for these Executive Orders (i.e., a plan, which apportions GHG reductions by economic sector/activity/region, similar to the Assembly Bill (AB) 32 Climate Change Scoping Plan).

Assembly Bill 32 and Senate Bill 32

In 2006, the California State Legislature adopted AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing State actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

In 2016, Senate Bill (SB) 32 and its companion bill, AB 197, amends HSC Division 25.5 and establishes a GHG reduction target of 40 percent below 1990 levels by 2030, and includes provisions to ensure the benefits of State climate policies reach into disadvantaged communities.

Climate Change Scoping Plan

AB 32 required preparing a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (HSC Section 38561(h)). CARB developed a Climate Change Scoping Plan that contains strategies to achieve the 2020 emissions cap (CARB, 2008). In 2008, the initial Climate Change Scoping Plan contained a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives. In 2014, the First Update to the Scoping Plan upon the initial Climate Change Scoping Plan with new strategies and recommendations (CARB, 2014b). CARB revised the projected statewide 2020 emissions estimate of 509.4 MMTCO₂e using the GWP values from the IPCC AR4 509.4 MMTCO₂e (CARB, 2014b). Therefore, the emission reductions necessary to achieve the 2020 emissions target of 431 MMTCO₂e would be 78.4 MMTCO₂e, or a reduction of GHG emissions by approximately 15.4 percent. In 2017, the 2017 Scoping Plan established a 2030 GHG reduction target of 40 percent emissions reductions below 1990 levels (CARB, 2017a).

Senate Bill 97

SB 97 was enacted requiring the Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions, or the effects related to releases of GHG emissions. OPR submitted proposed amendments to the Natural Resources Agency in accordance with SB 97 regarding analysis and mitigation of GHG emissions. As directed by SB 97, the Natural Resources Agency adopted Amendments to the *CEQA Guidelines* for GHG emissions, which became effective in 2010.

Senate Bill 375

SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. CARB adopted the vehicular GHG emissions reduction targets, in consultation with the metropolitan planning organizations (MPOs), which require a 7 to 8 percent reduction by 2020 and a 13 to 16 percent reduction by 2035, for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Kern Council of Governments (KCOG), will

work with local jurisdictions in the development of sustainable community strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. KCOG's reduction target for per capita vehicular emissions is 5 percent by 2020 and 10 percent by 2035 (CARB, 2010).

In 2018, CARB published the Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. At that time, Metropolitan Planning Organizations (MPO) had completed the Sustainable Community Strategies (SCS). CARB reviewed and determined, if implemented, all SCSs but one would achieve the SB 375 targets. CARB's 2018 plan updated targets for reductions and the technical and policy rationale supporting the recommendation, with the goal to ensure that the MPOs continue to innovate, while emphasizing implementation and accountability. In addition to increasing the GHG emissions reduction targets themselves (CARB, 2018).

KCOG adopted the 2018 Regional Transportation Plan (RTP), which includes a Sustainable Community Strategies (SCS) component in accordance with SB 375. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County.

California Green Building Standard Code

The State of California adopted the 2010 CALGreen Code, which became effective in January 2011. Building off of the initial 2008 California Green Building Code, the 2010 CALGreen Code represents a more stringent building code that requires, at a minimum, that new buildings and renovations in California meet certain sustainability and ecological standards. The 2010 CALGreen Code has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new non-residential buildings of any size that are not additions to existing buildings.

The California Building Standards Commission adopted the 2013 California Building Standards Code that also included the 2013 CALGreen Code, which became effective on January 1, 2014. The mandatory provisions of the code are anticipated to reduce GHG emissions by 3 MMTCO₂e by 2020, reduce water use by 20 percent or more, and divert 50 percent of construction waste from landfills. Additionally, the California Building Code includes a requirement for a 20 percent reduction in indoor potable water usage. The 2013 California Energy Code (Title 24, Part 6), which is also part of the CALGreen Code (Title 24, Part 11, Chapter 5.2), became effective on July 1, 2014. The 2016 CALGreen Code became effective on January 1, 2017. The updated code addresses clean air vehicles and requirements for electric vehicle charging infrastructure. The CALGreen Code was most recently updated in 2019 to include new mandatory measures for residential as well as nonresidential uses; the new measures took effect on January 1, 2020.

California Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (California Energy Commission, 2019). In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The California Public Utilities Commission (CPUC) and the

CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance, (2) reviewing and approving each investor-owned utility's renewable energy procurement plan, (3) reviewing contracts for RPS-eligible energy, and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.

Senate Bill 100

SB 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") was approved by the California legislature and signed by Governor Brown in September 2018. The bill increases RPS in 2030 from 50 percent to 60 percent and establishes a goal of 100 percent RPS by 2045.

Senate Bill 1368

SB 1368 requires the CPUC to establish a baseload generation standard for publicly owned or leased facilities that generate electricity at a GHG Emissions Performance Standard (EPS) of 1,100 pounds of CO₂e per megawatt-hour. SB 1368 also requires the posting of notices of public deliberations by publicly owned companies on the CPUC website and establishes a process to determine compliance with the EPS.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combined the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017b). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the USEPA and NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in 2018 to 2025 model years.

California Air Pollution Control Officers Association White Paper

The California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" (*CEQA and Climate Change*—an authoritative report issued by any organization) on evaluating GHG emissions under CEQA (California Air Pollution Control Officers Association, 2008). The strategies provided in that document are guidelines only and have not been adopted by any regulatory agency. The white paper serves as a resource to assist lead agencies in evaluating GHGs during review of environmental information documents. The methodologies used in this GHG analysis are consistent with the CAPCOA guidelines.

Regional

2018 Regional Transportation Plan/Sustainable Communities Strategy

The KCOG is the regional planning agency for Kern County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. KCOG serves as the federally designated metropolitan planning organization for Kern County. With respect to air quality planning and other regional issues, KCOG has prepared the 2018 Regional Comprehensive Plan for the region (Kern COG, 2018). The 2018 RCP is a long-term (24 year) general plan for the region's transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects.

The Kern COG 2018 RTP includes an SCS component in accordance with SB 375, the Sustainable Communities and Climate Protection Act of 2008. The Kern COG board of directors adopted its first SCS on June 19, 2014, and made a determination that, if implemented, the SCS would achieve the per capita passenger vehicle GHG emissions targets established by the board of directors. The 2020 target is a 5 percent per capita reduction and the 2035 target is a 10 percent per capita reduction from the 2005 base year.

The SCS strives to reduce air emissions from passenger vehicle and light-duty truck travel by better coordinating transportation expenditures with forecasted development patterns and, if feasible, help meet CARB GHG targets for the region. As explained in the Kern COG 2018 RTP EIR, the key purpose of SB 375 and the Kern COG SCS is to reduce per capita emissions originating from passenger vehicles and light-duty trucks. Accordingly, the 2018 RTP:

- Describes sources of emissions in the Kern region, 2020 and 2035 emission reduction targets established by CARB for the San Joaquin Valley, and modeling techniques used to estimate and forecast emissions
- Identifies statewide strategies to reduce transportation-related emissions and their anticipated effect within the Kern region
- Identifies regional strategies that complement the SCS by reducing emissions in other sectors (e.g., energy consumption)
- Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region and
- Compares the emissions reductions anticipated with implementation of the SCS with the regional targets (Kern COG 2018).

Local

Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan (Kern County, 2009) provides goals, policies, and implementation measures applicable to air quality, and as related to the project, that would also reduce project GHG emissions. These goals, policies, and implementation measures are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below.

Chapter 1: Land Use, Open Space, and Conservation Element

Air Quality

Policy

- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:
- (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Implementation Measures

- Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.
- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
1. Minimizing idling time.
 2. Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
1. Pave dirt roads within the development.
 2. Pave outside storage areas.
 3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
 4. Use of alternative fuel fleet vehicles or hybrid vehicles.
 5. Use of emission control devices on diesel equipment.
 6. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
 7. Provide bicycle lockers and shower facilities on site
 8. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
 9. The use and development of park and ride facilities in outlying areas.
 10. Other strategies that may be recommended by the local Air Pollution Control Districts.

Chapter 5: Energy Element

Solar Energy Development

Policies

- Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.
- Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

In 2009, the Kern County Board of Supervisors approved the proposed list of Energy, Efficiency, and Conservation projects for which the County will request funding under the provisions of the American Recovery and Reinvestment Act of 2009. The Kern County Planning and Natural Resources Department has requested an allocation for the preparation of a Climate Change Action Plan (CCAP) for the County General Plan. California's Climate Change Scoping Plan calls for local governments to reduce GHG emissions through the adoption of local programs as an important strategy to reduce community scale GHG emissions. Project conformance with an adopted CCAP would ensure the goal of AB 32 can be attained with the project.

4.8.4 Impacts and Mitigation Measures

Methodology

This section describes the methods used in conducting the CEQA impact analysis for GHG emission, the threshold of significance used in assessing impacts to GHG emissions, and the assessment of impacts related to GHG emissions and global climate change, including relevant mitigation measures where applicable. Emissions modeling and impact analysis is based on the Azalea Solar Project Air Quality and Greenhouse Gas Emissions Study.

With respect to GHGs, CARB developed statewide interim thresholds of significance in 2008. For industrial projects, CARB proposed a quantitative threshold of 7,000 metric tons of CO₂e per year. Additionally, the SJVAPCD incorporate best performance standards to determine a less than significant individual and cumulative impact on global climate change and does not require project specific quantification of GHG emissions. Emission from the project will be compared with the proposed CARB thresholds, since it is more stringent.

Construction Emissions

Based on information provided by the project applicant, construction assumptions for the project have been quantified using conservative assumptions for the emissions scenario. Construction emissions were quantified based on the equipment used, timing, duration of the projects, and anticipated model years. The emissions calculations used CARB off-road emissions factors for equipment exhaust, CARB Emission Factor (EMFAC) 2017 emission factors for on-road vehicle exhaust for the San Joaquin Valley Air Basin, calendar year 2022. More specifically, a quantitative assessment as made using the following:

- Construction equipment horsepower, load factors, and emission factors from the *California Emissions Estimator Model (CalEEMod)* model, version 2016.3.2, and the *CalEEMod User's Guide* (BREEZE Software, a Division of Trinity Consultants) and
- Vehicle emission factors, as incorporated from *EMFAC2014* into the *CalEEMod* model, version 2016.3.2.
- Fugitive dust emission factors for grading, bulldozing, truck loading/dumping, and paved road travel from *CalEEMod* model, which incorporates portion of AP-42 (U.S. Environmental Protection Agency [EPA], 2006 and 2011) and
- Fugitive dust control efficiencies from the South Coast Air Quality Management District's (SCAQMD) *CEQA Air Quality Analysis Handbook* (SCAQMD) and the Western Regional Air Partnership's (WRAP) *Fugitive Dust Handbook* (WRAP, 2006).

Construction emissions consist of vehicle and equipment exhaust and fugitive dust. Construction of the project is anticipated to take approximately 12 months. Air emissions calculations were performed for both before and after the incorporation of Mitigation Measures. These mitigation measures include those typically required by Kern County for NO_x (compliance with applicable CARB and SJVAPCD rules) and PM₁₀ (watering program for dust control). See the Air Quality and Greenhouse Gas Emissions Study (Appendix C of this EIR) for a complete list of construction assumptions, including equipment, and vehicles including the use of off-road equipment, on road vehicles and trucks, electricity and consumption. Details regarding the methods and activity assumptions by source type are provided below.

Operational Emissions

Long-term operational emissions associated with the proposed project were also calculated using EMFAC2017 and CalEEMod, version 2016.3.2. Long-term emissions result from operational mobile sources from new employees, cleaning of the solar panels, the Backup Energy Storage System (BESS) facility and emergency backup generators. All assumptions and calculations are provided in Appendix C of this EIR. Because the project consists of installation of solar panels to generate electricity, the GHG analysis accounted for energy generation.

- **Energy Generation:** The proposed solar facility would generate renewable energy with no associated GHG emissions. Therefore, operation of the project would result in displaced GHG emissions due to the gradual switch from non-renewable GHG-generating energy to renewable energy.

Decommissioning Emissions

At such time as the project is decommissioned, equipment operation and site restoration activities would result in emissions of GHGs. Given the assumption that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. It should be noted that this does not take into account any future improvement in technology or subsequent reductions in air emissions. Project decommissioning also is projected to occur over a 12 month time frame.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on GHGs.

A project would have a significant impact on GHGs if it would:

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The adopted *CEQA Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Quantitative significance thresholds for this impact area have not been adopted by the State of California.

Kern County has not developed a quantified threshold of significance for GHG emissions, but a project found to contribute to a net decrease in GHG emissions and found to be consistent with the adopted implementation of the CARB Climate Change Scoping Plan is presumed to have less-than-significant GHG impacts.

As discussed above, the SJVAPCD implemented a tiered approach to determining significance with respect to GHG emissions; however, in light of the *Center for Biological Diversity v. California Department of Fish and Wildlife* and SB 32, the quantitative threshold presented in their CCAP is no longer appropriate for determining significance of a project related GHG emissions. A quantitative assessment of GHG emissions, is provided, however, for disclosure and informational purposes.

Pursuant to the CEQA thresholds, impacts were evaluated based on whether the project would be consistent with the State's applicable GHG reduction goals, plans, policies, and regulatory requirements. Specifically, those plans and policies established in accordance with AB 32 and the State's RPS program as well as other federal, state, and local policies.

Project Impacts

Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with the use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SJVAPCD recommends that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison. The determination of significance, therefore, is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in *Section 4.3, Air Quality*. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (e.g., haul trucks, vendor trucks, and worker vehicles). Directly emitted GHG emissions during construction would result in a less than significant, short-term impact to climate change. As shown in **Table 4.8-2: Estimated Annual Construction Greenhouse Gas Emissions With and Without Mitigation**, the GHG emissions from the construction phase of the project would be well below CARB's proposed threshold of 7,000 MT CO₂e per year.

TABLE 4.8-2: ESTIMATED ANNUAL CONSTRUCTION GREENHOUSE GAS EMISSIONS WITH AND WITHOUT MITIGATION

Project Construction	Mitigated Maximum Annual Emissions (MT/yr) ^{a, e}		
	CO ₂	CH ₄	CO _{2e}
Construction Year 2022	4,747.90	0.65	4,764.13
Maximum Annual Emissions (MT/yr)	4,747.90	0.65	4,764.13
SJVAPCD Significance Threshold ^b	N/A	N/A	Implement BPS ^c
Kern County APCD Significance Threshold (MT/yr) ^c	N/A	N/A	25,000

Construction Phase	Mitigation Emissions by Phase (MT/Phase)			2022 Duration (Days)
PV Array Construction				
Demolition	30.14	0.01	30.27	7
Site preparation/Survey/Grading/Fencing/Staging	644.70	0.11	647.36	60
PV Array Mechanical Installation	1,765.79	0.24	1,771.91	180
PV Array Electrical Installation	792.11	0.09	794.47	100
Substation and Transmission Line Installation	962.39	0.13	965.64	120
Battery Storage Installation	552.76	0.07	554.47	90
Construction Project Management	0.00	0.00	0.00	350
2022 Construction Total	4,747.90	0.65	4,764.13	350

Notes:

N/A = Not Available (i.e. no significance threshold exists)

a. GHG emissions are evaluated on an annual basis, using the CalEEMod model. Therefore, emissions presented are in the sum of all emissions occurring within a given year, regardless of whether an activity is occurring sequentially or concurrently during that year.

b. Significance thresholds for SJVAPCD are from 2015 Guidance for Assessment and Mitigating Air Quality Impacts, dated March 19, 2015.

c. Best performance standards (BPS) greenhouse gases are listed in Appendix C of this EIR. Since solar panels will offset the electricity generation (MWh) from fossil fuel fired electricity generation, solar panels are considered best performance standards for electricity generation.

d. Mitigation measures MM 4.3-1 through MM 4.3-5 would be implemented to reduced emissions.

Operational Emissions

Project-related activities would contribute indirectly to the generation of GHG emissions during operation by providing low-GHG electricity to California customers and displacing higher GHG emitting resources. The applicable GHGs that have been quantitatively estimated for this project include CO₂, CH₄, and N₂O. The project would be compliant with all applicable federal, state, regional, and local rules and regulations pertaining to GHG emissions. The proposed project substations may feature circuit breakers that contain SF₆ gas, used as an insulator and an arc suppressor in the breakers. SF₆ is inert and non-toxic and is encapsulated in the breaker assembly. SF₆ is a GHG with substantial global warming potential because of its chemical nature and long residency time within the atmosphere. However, under normal conditions, it would be completely contained in the equipment and SF₆ would be released only in the unlikely event of a

failure, leak, or crack in the circuit breaker housing. New circuit breaker designs have been developed to minimize the potential for leakage, compared to that of past designs, and the amount of SF6 that could be released by the solar facility equipment would be minimal.

The project would require minimal energy for security and monitoring systems during non-daylight hours and for the BESS facilities since regular operation and maintenance activities would not occur during nighttime hours. The amount of energy required during non-daylight hours would be negligible. The project would introduce a non-fossil-fuel-based energy source, which would have the indirect effect of displacing emissions otherwise occurring at natural gas and coal-fired power plants. Additionally, the project could generate GHG-free electricity that would offset CO₂e and other emissions that would have resulted from producing an equivalent amount of electricity from fossil fuel-fired electric generators.

Though the project would generate a very small amount of GHG emissions during operations, it should be noted that the solar energy provided by the project is much cleaner source of energy than traditional sources used for the generation of electricity, such as the burning of coal, fuel oil, or natural gas. Solar energy production creates no CO₂ emissions. This clean energy source is considered a best performance standard for electricity generation. Projects implementing BPS for GHG would be determined to have a less than significant impact. Additionally, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-5 would further reduce impacts to a less than significant level.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Arco Substation Interconnection Facilities for the transport of renewable energy would result in the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area.. These improvements would not generate greenhouse gas emissions, either directly or indirectly, with the potential to significantly affect the environment. Further, as facilities used to transport renewable energy to the grid, the Arco Substation would contribute to achieving the State's RPS goals and would not conflict with the state goals to reduce GHG emissions.

Mitigation Measures

Implement Mitigation Measures MM 4.3-1 through MM 4.3-5, see Section 4.3, *Air Quality*.

Level of Significance

With implementation Mitigation Measures MM 4.3-1 through MM 4.3-5, see Section 4.3, *Air Quality*, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.8-2: The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas.

As discussed above, the project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions, and would by design assist in achieving the state's goals of reducing GHG emissions. The project would be consistent with and promote AB 32, SB 100, and other statewide renewable energy goals by decreasing reliance on fossil fuels for power supply and promoting the use of renewable

energy within the state's electricity section. Therefore, there are no conflicts with GHG plans, policies, or regulations, and thus there would be no impact.

SB 350 established California's 2030 GHG reduction target of 40 percent below 1990 levels. To achieve this goal, SB 350 sets ambitious 2030 targets for energy efficiency and renewable electricity, among other actions aimed at reducing GHG emissions across the energy and transportation sectors. The project involved the construction and operation and maintenance of a solar facility that would produce a new renewable source of energy in Kern County. Therefore, the project would directly support California's Renewable Portfolio Standard goal under SB 100 of increasing the percentage of electricity procured from renewable sources to 60 percent by 2030 and a target of 100 percent from eligible renewable energy resources and zero-carbon resources by 2045.

CARB Climate Change Scoping Plan

The project would comply with the strategies recommended by the State of California, the USEPA, and the Climate Change Scoping Plan, as shown in **Table 4.8-3: California Greenhouse Gas Emission Reduction Strategies**, below. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 100 percent RPS by 2045 as well as the other measures listed in **Table 4.8-4: Applicable Scoping Plan Strategies for Project**. These measures would primarily be those actions related to energy efficiency. A discussion of the consistency of the project with these measures is provided below. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and Statewide emissions of GHGs over the expected life of the project.

TABLE 4.8-3: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
Vehicle Climate Change Standards: AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in September 2004.	These are CARB enforced standards; vehicles that access the project and are required to comply with the standards would comply with these strategies.
Other Light Duty Vehicle Technology: New standards would be adopted to phase in beginning in the 2017 model.	
Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	
Diesel Anti-Idling: In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Project would be subject to State law.
Hydrofluorocarbon Reduction: (1) Ban retail sale of HFC in small cans; (2) Require that only low global warming potential refrigerants be used in new vehicular systems; (3) Adopt specifications for new commercial refrigeration; (4) Add refrigerant leak tightness to the pass criteria for vehicular Inspection and Maintenance programs; (5) Enforce federal ban on releasing HFCs.	This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to would comply with the measures.
Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	Not applicable

TABLE 4.8-3: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
Manure Management: Reduction of volatile organic compounds from confined animal facilities through implementation of control options.	Not applicable
Alternative Fuels – Biodiesel Blends: CARB would develop regulations to require the use of one to four percent biodiesel displacement of California diesel fuel.	Not applicable
Alternative Fuels – Ethanol: Increased use of ethanol fuel.	Not applicable
Achieve 50 percent Statewide Recycling Goal: Achieving the State’s 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a Statewide basis. Therefore, a two percent additional reduction is needed.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Zero Waste – High Recycling: Additional recycling beyond the State’s 50 percent recycling goal.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Landfill Methane Capture: Install direct gas use or electricity projects at landfills to capture and use emitted methane.	Not applicable
Urban Forestry: A new Statewide goal of planting five million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	Not applicable
Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.	Not applicable
Water Use Efficiency: 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.	Not applicable
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	The project would be consistent with State law.
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	The project would be consistent with State law.
Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.	Not applicable

TABLE 4.8-3: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.	Not applicable
Smart land use, demand management, ITS, and value pricing are critical elements for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	Not applicable
Enteric Fermentation: Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions.	Not applicable
Green Buildings Initiative: Green Building Executive Order, S-20-04 (CA 2005), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. Consistent with Mitigation.	Not applicable
California Solar Initiative: Installation of 1 million solar roofs or an equivalent 3,000 megawatts (MW) by 2017 on homes and businesses; increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	The project would result in an electric power generating capacity of approximately 250 MW. Therefore, the project would help support and not conflict with this strategy.

TABLE 4.8-4: APPLICABLE SCOPING PLAN STRATEGIES FOR PROJECT

ID #	Sector	Strategy Name
T-1	Transportation	Advanced Clean Cars
T-2	Transportation	Low Carbon Fuel Standard
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
W-1	Water	Water Use Efficiency
CR-1	Electricity and Natural Gas	Energy Efficiency
H-6	High GWP Gases	SF ₆ Leak Reduction Gas Insulated Switchgear

SOURCE: CARB, 2014c.

Action T-1 relates to the Advanced Clean Cars program, in which the project would provide work vehicles for employees that are in compliance with the CARB vehicle standards that are in effect at the time of the

vehicle purchase. In addition, as it related to Low Carbon Fuel Standards, under Action T-2, motor vehicles driven by the project's employees for work purposes would use compliant fuels.

Action E-3 relates to renewable energy and the RPS, which is intended to increase California's renewable energy production to 20 percent by 2010, to 33 percent by 2020 and up to 100 percent by 2045, pursuant to SB 100. The CPUC estimates that the utilities are well-positioned to meet the 33 percent requirement by 2020 (California Energy Commission, 2019). Utilities would also be required to meet the updated RPS goals of 60 percent by 2030, and 100 percent by 2045, pursuant to SB 100. A key prerequisite to reaching a target of 100 percent RPS would be to provide sufficient electric transmission lines to renewable resource zones and system changes to allow integration of large quantities of intermittent wind and solar generation. The project proposes a solar array with an electric power generating capacity of approximately 60 MW and 55 MW of storage capacity. Therefore, the project would be consistent with Action E-3.

Action E-4 aims to install 3,000 MW of solar energy capacity under the Million Solar Roofs Program. This measure would offset electricity from the grid, thereby reducing GHG emissions. By requiring greater energy efficiency for projects that seek solar incentives, the State would be able to reduce both electricity and natural gas needs and their associated GHG emissions. The project would result in an electric power generating capacity of approximately 60 MW. Therefore, the project would not conflict with Action E-4.

Action W-1 relates to water use efficiency. The State is currently implementing targeted water use efficiency programs as part of an integrated water management effort. Consistent with this measure, the project will utilize water panel washing, equipment washing, non-sanitary uses, and other miscellaneous uses, such as landscaping obtained on site from trucks. The water used during operation of the project would be used in an efficient manner to reduce impacts to local water resources. The project would use approximately 109 AFY of water per year less than the existing use.

Action CR-1 relates to energy efficiency in commercial and residential buildings. Also, Action CR-1 notes the need for more aggressive utility programs to achieve long-term energy savings. The project would result in the development of PV solar energy generating facilities that would provide renewable energy to California Investor-Owned utilities, which in turn would be used by commercial and residential buildings in the State. Therefore, the project is consistent with and would not obstruct Action CR-1.

Action H-6 relates to sulfur hexafluoride (SF₆) from leakage of gas insulated switchgear use in electricity transmission and distribution systems by setting limits on leakage rates and implement best management practices for the recovery and handling of SF₆. Consistent with this action, the project would comply with any and all applicable regulatory requirements for any SF₆ containing switchgear.

KCOG's 2018 RTP

The 2018 RTP incorporates local land use projections and circulation networks in city and county general plans. The 2018 RTP is not directly applicable to the project because the underlying purpose of the 2018 RTP is to provide direction and guidance by making the best transportation and land use choices for future development. Nevertheless, the project would not conflict with the goals and policies of the 2018 RTP. In addition, the project would not impact local transportation or land use during operation.

Other Federal/State/Local Policies

Table 4.8-5: *Project Consistency with an Applicable Plan, Policy, or Regulation for GHG Emissions*, evaluates project consistency with other applicable federal, State and local policies regarding GHG

emissions. As shown in the table below, the project would fall below the annual emission triggers for compliance with federal regulations; therefore, federal regulations would not be applicable to the project. As a renewable energy project, the project would be exempt from State annual GHG reporting requirements and would be considered consistent with California's Emission Performance Standard and RPS requirements (described in Section 4.8.3, *Regulatory Setting*).

TABLE 4.8-5: PROJECT CONSISTENCY WITH AN APPLICABLE PLAN, POLICY, OR REGULATION FOR GHG EMISSIONS

Adopted Plan, Policy, or Regulation	Consistency Determination	Project Consistency
Federal		
40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.	Not applicable	The project would have direct CO ₂ e operating emissions that are well below the 25,000 ton/year rule trigger.
40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.	Not applicable	The project would have direct CO ₂ e operating emissions that are well below the 75,000 ton/year rule trigger.
State		
SB 1368. EPS Standard.	Consistent	The project, as a renewable energy generation facility, is determined by rule to comply with the GHG Emission Performance Standard requirements of SB 1368.
SB 351. 50% RPS Standard.	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
SB 100. 60% Standard by 2030 and 100% by 2045	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
AB 32. Annual GHG Emissions Reporting	Not applicable	The project, as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity generating facilities as currently required by the CARB for compliance with the California Global Warming Solutions Act of 2006 (AB 32 Núñez, Statutes of 2006, Chapter 488, Health and Safety Code Sections 38500 et seq.).
Local		
Kern County General Plan – Air Quality Element Policies Goals and Implementation Measures	Consistent	Air Quality Mitigation Measures would ensure that the project is consistent with the Kern County General Plan Air Quality Element Policies, Goals, and Implementation Measures that will indirectly reduce GHG emissions by reducing fossil fuel combustion.

Overall, because the main objectives of the project are to assist California Investor-Owned utilities in meeting their obligations under California's RPS Program and assist California in meeting the GHG emissions reduction goal of 1990 level GHG emissions by 2020 as required by AB 32 and the future reduction goal of 40 percent below 1990 levels by 2030, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan as well as applicable federal, State, and local policies. Specifically, the project would assist the State and regulated utility providers to generate a

greater portion of energy from renewable sources consistent with the 2030 and 2045 RPS, including the targets established under SB 100. Therefore, this impact would be less than significant.

Consideration of Mitigation Measures

The Office of the California Attorney General maintains a website with a list of CEQA mitigation measures for global climate change impacts. The Attorney General has listed some examples of types of mitigation measures that local agencies may consider to offset or reduce global climate change impacts from a project. The Attorney General assures that the presented lists are examples and not intended to be exhaustive, but instead provide measures and policies that could be undertaken. Moreover, the measures cited may not be appropriate for every project, so the Attorney General suggests that the lead agency should use its own informed judgment in deciding which measures it would analyze, and which measures it would require, for a given project.

The Attorney General suggests measures that could be undertaken or funded by a diverse range of projects, related to energy efficiency; renewable energy; water conservation and efficiency; solid waste measures; land use measures; transportation and motor vehicles; and carbon offsets. However, most of the suggested measures from the Attorney General's office would not be applicable to the project, since they are more appropriate and applicable measures to reduce long-term operational GHG emissions, and the majority of emission sources from the project are short-term in nature. Long-term operational emissions would be minimal and more than offset by the renewable energy production.

The impacts of GHG emissions on climate change are indirect, climate change is a worldwide phenomenon, and project-level emissions cannot be correlated with specific impacts based on currently available science. However, based on the analysis above, the project would be consistent with California's strategies to reduce greenhouse gas emissions to the levels required by AB 32, as well as state GHG emission reductions post-2020. As a renewable energy project, the project would contribute to achieving the mandated emission reduction targets established by AB 32. Additionally, the project would comply with any applicable forthcoming regulations or requirements adopted under AB 32 or imposed by the State or federal government. Therefore, considering the project's minimal annual emissions and anticipated reduction in overall GHG emissions, the project is not expected to significantly contribute to global warming or climate change.

Furthermore, as the project would have an electric power generating capacity of approximately 60 MW, the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General's Recommended Measure to "Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning." Therefore, the project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the project is below regional regulatory thresholds and would result in a reduction of GHG emissions, no mitigation measures would be required.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These improvements would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas. Further, as facilities used

to transport renewable energy to the grid, the interconnection facilities would contribute to achieving the State's RPS goals and would not conflict with the state goals to reduce GHG emissions.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

Emissions of GHGs and their contribution to global climate change are considered a cumulative impact by definition. Therefore, the geographic extent of the project's cumulative area of impact would be worldwide.

The adopted *CEQA Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather is it the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The State has mandated a goal of reducing Statewide emission to 1990 level by 2020 and reducing Statewide emissions to 40% below 1990 levels by 2030, even though Statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce Statewide GHG emissions. Currently, there are no applicable CARD, SJVAPCD, or Kern County Significance thresholds or specific reduction targets, and no approved policy or guidance to assist in determining significance at the project or cumulative levels. However, as discussed above, while Kern County has not developed a quantified threshold of significance for GHG emissions, a project found to contribute to a net decrease in GHG emissions and found to be consistent with the adopted implementation of the CARB Climate Change Scoping Plan is presumed to have a less than significant GHG impact.

Quantitative significance thresholds for this impact area have not been adopted by the State of California. In addition, Kern County has not adopted quantitative thresholds for determining significance of GHG emissions at the time of this writing.

Total GHG construction emissions of 4,764.13 MT CO_{2e} for the first years construction for the project are quantified and shown in **Table 4.8-3**, above. When this amortized over the 30 year project horizon it equates to approximately 158.80 MT CO_{2e} per year. The main contribution of GHG emissions from the project would be from construction equipment usage during the construction and decommissioning phases and motor vehicle trips by employees and maintenance vehicles during project operations. Transportation sources account for 40% of California's total GHG emissions. The project's emission would, therefore,

contribute to the increase in emissions in the transportation sector. Construction emissions would be finite and temporary and would cease at the end of construction activities.

Although the project would result in a contribution to cumulative GHG emissions in California, operation of the project could offset emissions from the electricity generation sector. Overall, the project clearly would not contribute to cumulative GHG emissions in California because operation of the project would provide electric power with negligible operational GHG emissions over the long term when compared to traditional fossil-fueled generation technologies. Thus, the project would not have a cumulatively considerable impact on global climate change, and cumulative impacts would therefore be less than significant.

CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may be to adopt ordinances or regulations rather than impose conditions on a project-by-project basis. Global climate change is this type of issue. GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). Causes and effects are not just regional or Statewide, they are worldwide. Because the project's construction and operational GHG emissions would be offset by renewable power generation and no mitigation is proposed, any other feasible reductions would be accomplished through CARB regulations adopted pursuant to AB 32 and SB 32. Cumulative impacts of the project on global climate change would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The construction and operation of the interconnection facilities to the Arco Substation for the transport of renewable energy would result in the addition of minor equipment within the existing Arco Substation and would not generate greenhouse gas emissions, either directly or indirectly, with the potential to significantly affect the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas. To further, as facilities used transport renewable energy to the grid, the Arco Substation would contribute to achieving the State's RPS goals and would not conflict with the state goals to reduce GHG emissions.

Mitigation Measures

No mitigation would be required.

Level of Significance

Cumulative impacts would be less than significant. Cumulative impacts would be less than significant for the PG&E Interconnection Facilities, and no mitigation would be required for the P&E Interconnection Facilities.

Section 4.9

Hazards and Hazardous Materials

4.9.1 Introduction

This section of EIR describes the affected environment and regulatory setting for hazards and hazardous materials in the study area. It also describes the project's potential impacts on residences and other sensitive receptors that could be exposed to these hazards (other than geologic hazards; see Section 4.7, *Geology and Soils*, of this EIR for discussion on geologic hazards) and presents mitigation measures where applicable. Information in this section is based primarily on the *Phase I Environmental Site Assessment*, prepared by Surf 2 Snow (S2S) Environmental Resources Management (June 2021), located in Appendix I of this EIR, and publicly available databases including the Department of Toxic Substances Control's Envirostor and State Water Resources Control Board's Geotracker.

4.9.2 Environmental Setting

Existing Setting

The project site consisted of five, gently sloping, vacant, and undeveloped parcels of land covered with sparse to moderately dense native vegetation that is currently used for grazing. Metal fencing, with gates at the entry and exit points, was observed around each of the three large parcels (043-210-17, 043-210-28, and 048-350-020) with dirt roads bisecting the perimeter and central portions of the Site. Although dirt paths were observed onsite, no livestock were present during the Site reconnaissance in 2020. A watering trough area where livestock appear to gather was observed in the northwest corner of parcel 043-210-17. A settling pond was observed along the eastern boundary of parcel 043-210-17. The pond appeared to be used to contain excess water runoff from adjacent pistachio orchards. The water in the pond was being pumped to a sprinkler system and sprayed over the area of parcel 043-210-18. The project site is bordered to the north and west by vacant parcels used for dry farming and grazing, and to the South and East by parcels used for agriculture (Figs, Pistachios, and Almonds). The closest school to the project site is the A.M Thomas Middle School, located approximately 15 miles southeast of the project site. The nearest airport to the project site is Lost Hills Airport, located approximately 14 miles southeast of the project site. State Route (SR) 33, the nearest highway, is located approximately 3.5 miles west of the project.

Hazardous Materials and Waste

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under Title 22 of the California Code of Regulations (CCR), the term "hazardous substance" refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity; (2) ignitability; (3) corrosiveness; and (4) reactivity (22 CCR 11, Article 3).

A hazardous material is defined as a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either: (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible,

illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (22 CCR 66260.10).

Various forms of hazardous materials can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials. The Phase I Environmental Site Assessment conducted for the project site was used to determine potential risks of encountering legacy contaminants at the site.

Photovoltaic Solar Module Technologies

Photovoltaic (PV) solar panels (known within the industry as “modules”) that would be installed on the project site would consist of either crystalline silicon or cadmium telluride (CdTe) thin film technology. Crystalline silicon and thin film CdTe solar modules that would be installed on the project site may include small amounts of semiconductor or electrically conducting materials encapsulated within the modules that are considered to be hazardous such as lead or cadmium compounds. Because such materials are in a solid and non-leachable state, broken crystalline silicon and thin film CdTe solar modules would not be a source of pollution to surface water, stormwater, or groundwater. Crystalline silicon and thin film CdTe modules removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility. In addition, the energy storage systems would include industry-standard battery systems which contain chemical contents that are considered hazardous, such as lithium ion batteries as well as lead acid, sodium sulfur, and sodium or nickel hydride batteries.

Should thin film CdTe solar modules (CdTe PV) be installed on the project site, they would consist of a thin semiconductor layer that is in the environmentally stable form of a compound rather than the leachable form of a metal. The CdTe compound is encapsulated in the PV module with the PV module containing less than 0.1 percent Cd content by weight. Due to optimal optical properties, only a three-micron thin layer of CdTe is used to absorb incident sunlight, with Cd content per 8 square feet of PV module less than that of one C-size flashlight nickel-cadmium (NiCd) battery.

CdTe PV is a mature technology with two decades of field deployment. It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil. During the PV module manufacturing process, CdTe is bound under high temperature to a sheet of glass by vapor transport deposition, coated with an industrial laminate material, insulated with solar edge tape, and covered with a second sheet of glass. The module design results in the encapsulation of the semiconductor material between two sheets of glass thereby preventing the exposure of CdTe to the environment. Experimental leaching studies, theoretical worst-case modeling and field examinations concluded that CdTe PV modules pose little to no risk under foreseeable accidents such as fire, breakage, and extreme weather events like tornadoes and hurricanes (Virginia Tech University, 2019 and Fthenakis et al., 2020).

Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. These studies have consistently concluded that during normal operations, end-of-life disposal and in the event of exceptional accidents such as fire or breakage, CdTe PV modules do not present an environmental risk. CdTe releases are unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. The PV module manufacturer provides global CdTe module recycling services. End-of-life CdTe PV modules are currently characterized as federal non-hazardous waste, and as

a California-only hazardous waste. Solar equipment and infrastructure would be recycled as practical or disposed of in compliance with applicable laws. CdTe PV modules are an article of commerce, and are not classified as a hazardous material for shipping purposes under either federal or State law.

Human health risk assessments looking at the environmental, health, and safety aspects of both crystalline silicon and thin film CdTe PV technologies have been evaluated by the International Energy Agency, concluding that CdTe PV modules do not present a health risk in the event of exceptional accidents such as fire or breakage, with regards to their use of lead and cadmium compounds, respectively (P. Sinha et al. 2018 and P. Sinha et al. 2019).

Historical Property Use

Based on a review of historical aerial photographs, the project site is interpreted to have been used for dry farming/grazing and/or agricultural purposes from approximately 1937 to present, with the presence of irrigation observed in 2005. Possible dry farming/grazing activities may have occurred prior to 1937. In the late 1960's or early 1970's, a PG&E power substation and associated transmission lines were constructed on two off-site parcels. Orchards were planted east and south of the site in the late 1960's/early 1970's.

According to a review of the Department of Toxic Substances Control (DTSC) Envirostor database, there are no hazardous release sites located within a mile of the project site (DTSC, 2022). Similarly, the State Water Resource Control Board's (SWRCB) GeoTracker database also showed no release sites nor reported leaking underground storage tanks (LUSTs) located within a mile of the project site.

De Minimis Conditions

The following de minimis conditions (DMCs) were identified in the Phase I ESA for the project site:

- A total of 1 water disposal well and 27 historical oil wells were identified within approximately 1 mile of the project site. Only 5 of the 27 wells are currently active, with all others appearing to have been dry and plugged following drilling. Two out of service above ground storage tanks are also located approximately 1 mile east of the project site. Oil field operations must always be considered a potential source of environmental contamination. Typical contaminants can include crude and refined petroleum hydrocarbons, heavy metals, biocides, and possibly polychlorinated biphenyls. Given all oil and water disposal wells are downgradient from the project site, as well as their proximity to the project site, oil field operations are a DMC and not an environmental concern for the project site.
- Historical research indicates that the project site has been utilized for agricultural land use, primarily dry farming, grazing, and occasional irrigation (on the eastern portion). Residual concentrations of organochlorine and metal-based pesticides such as dichlorodiphenyltrichloroethane (DDT), dieldrin, toxaphene, and arsenic may have been used on the project site, as is common throughout many agricultural regions of the United States. These classes of pesticides are known to have the potential to remain in detectable concentrations in the subsurface for extended periods of time. Based on the current use of the project site, and planned redevelopment as a solar facility, the potential presence of residual concentrations of pesticides in the shallow on-site soils is considered a DMC, since the pesticides have a low potential to exceed regulatory action levels for agricultural or commercial properties.

- During the project site visit, an area of impacted soil was observed near the eastern boundary of the Site. Subsequent interviews identified this area as a land farm for sediment (“organics”) removed from the bottom of a settling pond directly south of this area. The pond is owned and operated by the Wonderful Company. Residual concentrations of organochlorine and metal-based pesticides may be present in agricultural water stored in settling ponds, along with the associated sediment at the bottom of those ponds. Based on the current use of the project site, the potential presence of residual concentrations of pesticides in the area of the land farm is considered a DMC, since the pesticides have a low potential to exceed regulatory action levels for agricultural or commercial properties.

Increase in Ambient Temperatures

All exposed surfaces (e.g., houses, cars, rocks) absorb heat produced by the sun. A “heat island” effect is generated when cities cover miles of land with structures (e.g., concrete buildings and asphalt roads), which absorb and store significantly more heat during the day than undeveloped earth. Additionally, these cities are filled with energy-consuming devices (e.g., engines, appliances, and heating, air-conditioning, and ventilation [HVAC] systems) that generate waste heat.

Solar arrays consist of solar panels mounted on aluminum and steel support structures. The support structures have little or no exposure to sunlight. The project site would not be covered entirely with solar panels. The amount of the sun’s heat absorbed by a solar panel is similar to the amount of the sun’s heat absorbed by open land. However, solar panels store less heat than the earth because they consist of a thin, lightweight glass that is surrounded by airflow. Therefore, heat dissipates quickly from a solar panel compared with solid earth, which dissipates heat slowly. The project would have energy-consuming devices (e.g., inverters). Therefore, the project would generate marginal amounts of waste heat on the project site. However, there is nothing in the record to date that would indicate that the project would significantly increase ambient air temperatures outside the project site.

Fthenakis and Yu from Columbia University and Brookhaven National Laboratory combined models with field data to determine the extent to which PV facilities altered ambient air temperatures (Fthenakis and Yu, 2013). Temperatures surrounding the facility were found to cool completely at night and the researchers determined that the PV facility “did not induce a day-after-day increase in ambient temperatures, and therefore, adverse micro-climate changes from a potential PV plant are not a concern”. This study also concluded that increases in temperatures completely dissipated approximately 5-18 meters above the facility and that thermal energy “promptly dissipated” with distance from the facility. Remote sensing research produced by Edalat and Stephen from UNLV in 2017 supports the conclusions of Fthenakis and Yu (2013), demonstrating that land surface temperatures surrounding a solar facility were not significantly impacted by the solar facility (Edalat and Stephen, 2017).

Hazardous Materials Transportation

There are no major highways that run in the vicinity of the project sites. The nearest highway is SR-33, located approximately 3.5 miles west of the project. The transportation of hazardous materials within the State of California is subject to various federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway that is not designated for that purpose, unless the use of a highway is required to permit delivery or the loading of such materials (California Vehicle Code, Sections 31602 (b) and 32104(a)). The California Highway Patrol (CHP) designates through routes to be

used for the transportation of hazardous materials. Information on CHP requirements and regulatory authority is provided in Section 4.9.3, *Regulatory Setting*, below. According to Section 2.5.4 of the Kern County General Plan Circulation Element, SR-33 (approximately 3.5 miles west), I-5 (approximately 6 miles east), and SR-46 (approximately 10 miles south) are designated as adopted commercial hazardous materials shipping routes.

Airports

The nearest airport to the project site is the Lost Hills Airport, located approximately 14 miles southeast of the project site. The project is not located within an Airport Influence Area, per the Kern County Airport Land Use Compatibility Plan.

Fire Hazard Areas

The California Department of Forestry and Fire Prevention requires counties within the State to develop fire protection management plans that address potential threats of wildland fires. The Kern County Wildland Fire Management Plan identifies federal, State, and local responsibility areas for the entire County to facilitate coordination efforts for fire protection services. The project site is sparsely vegetated and not within an area identified by the California Department of Forestry and Fire Protection as having high or very high fire risk, as determined by the Kern County General Plan and CAL FIRE (CAL FIRE, 2022). Impacts related to wildfire hazards are further discussed in Section 4.18, *Wildfire*, of this EIR.

4.9.3 Regulatory Setting

Federal

Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.)

The Resource Conservation and Recovery Act (RCRA) grants authority to the U.S. Environmental Protection Agency (USEPA) to control hazardous waste from start to finish. This covers the production, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of non-hazardous solid waste. RCRA allows individual states to develop their own programs for the regulation of hazardous waste as long as they are at least as stringent as the RCRA. The State has developed the California Hazardous Waste Control Law (Health and Safety Code [HSC] sec. 25100 et. Seq. And 22 California Code of Regulations [CCR] sec. 66260.1 et seq.) and the USEPA has delegated authority for RCRA enforcement to the State. Primary authority for the Statewide administration and enforcement of HWCL rests with California Environmental Protection Agency's (CalEPA) Department of Toxic Substances Control (DTSC).

RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The 1986 amendments to the RCRA enabled the USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act of 1970, which is implemented by the federal Occupational Safety and Health Administration (OSHA), contains provisions with respect to hazardous materials handling. OSHA requirements, as set forth in 29 Code of Federal Regulations (CFR) Section 1910, et. seq., are designed to promote worker safety, worker training, and a worker's right-to-know. The U.S. Department of Labor has delegated the authority to administer OSHA regulations to the State of California. The California OSHA program (Cal/OSHA) (codified in the CCR, Title 8, or 8 CCR generally and in the Labor Code secs. 6300-6719) is administered and enforced by the Division of Occupational Safety and Health (DOSH). Cal/OSHA requires employers to implement a comprehensive, written Injury and Illness Prevention Program (IIPP) for potential workplace hazards, including those associated with hazardous materials.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law (U.S. Code Title 42, Chapter 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites; provides for liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, CFR, Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) and the National Priorities List

The USEPA also maintains the Comprehensive Environmental Response Compensation (CERCLIS) and Liability Information System list. This list contains sites that are either proposed to be or on the National Priorities List (NPL), as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The NPL is a list of the worst hazardous waste sites that have been identified by Superfund. There are no NPL sites on the Project Site.

Emergency Planning and Community Right-to-Know Act

The federal Emergency Planning and Community Right-To-Know Act (EPCRA) was enacted to inform communities and residents of chemical hazards in their area. Businesses are required to report the locations and quantities of chemicals stored on-site to both State and local agencies. EPCRA requires the USEPA to maintain and publish a digital database list of toxic chemical releases and other waste management activities reported by certain industry groups and federal facilities. This database, known as the Toxic Release Inventory, gives the community more power to hold companies accountable for their chemical management.

Hazardous Materials Transportation Act

The U.S. Department of Transportation (DOT) receives authority to regulate the transportation of hazardous materials from the Hazardous Materials Transportation Act, as amended and codified (49 USC 5101 et seq.). The DOT is the primary regulatory authority for the interstate transport of hazardous materials and establishes regulations for safe handling procedures (i.e., packaging, marking, labeling and routing).

In California, Section 31303 of the California Vehicle Code states that any hazardous material being moved from one location to another must use the route with the least travel time. This, in practice, means major roads and highways, although secondary roads are permitted to be used for local delivery. These policies are enforced by both the California Highway Patrol and the California Department of Transportation (Caltrans).

Clean Water Act/Spill Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC Section 1251 et seq.) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The Project is within the jurisdiction of the Central Valley RWQCB (RWQCB).

Section 402 of the CWA authorizes the California State Water Resources Control Board (SWRCB) to issue NPDES General Construction Storm Water Permit (Water Quality Order 99-08-DWQ), referred to as the “General Construction Permit.”

Construction activities can comply with and be covered under the General Construction Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off-site into receiving waters
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation; and
- Perform inspections of all BMPs.

NPDES regulations are administered by the RWQCB. Projects that disturb one or more acres are required to obtain NPDES coverage under the Construction General Permits.

Other Regulations

Other federal regulations overseen by the EPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149 -- Water Programs, 40 CFR Parts 239 to 259 -- Solid Wastes, and 40 CFR Parts 260 to 279 -- Hazardous Waste. These regulations designate hazardous substances under applicable federal statutes; determine the reportable quantity for each substance that is

designated as hazardous; and establish quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

State

California Building Code, Section 608

Section 608 of the California Building Code includes requirements for battery energy storage systems greater than 20 kWh, which includes the proposed energy storage facilities. Section 608 includes requirements for vehicle impact protection, location, spacing between batteries, egress, security, and fire suppression systems.

California Public Utilities Commission General Order 95: Rules for Overhead Electric Line Construction

General Order 95 (GO 95) is the key standard governing the design, construction, operation, and maintenance of overhead electric lines within the State of California. It was adopted in 1941 and updated most recently in 2012. GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, and standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements. The latter, governed by Rule 35, and inspection requirements, governed by Rule 31.2, are summarized below:

Rule 35, *Tree Trimming*, defines minimum vegetation clearances around power lines. Rule 35 guidelines require 10-foot radial clearances for any conductor of a line operating at 110,000 Volts or more, but at less than 300,000 Volts. This requirement would apply to the proposed 70-kV lines.

Rule 31.2, *Inspection of Lines*, requires that lines be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition so as not to create a hazard.

Power Line Hazard Reduction (PRC 4292)

Public Resources Code (PRC) 4292 requires a 10-foot clearance around any tree branches or ground vegetation at the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of PRC 4296. Project structures would be exempt primarily because of their design specifications.

Power Line Clearance Required (PRC 4293)

PRC 4293 provides guidelines for line clearance, including a minimum of 10 feet of vegetation clearance around any conductor operating at 110 kV or higher.

Minimum Clearance Provisions (14 CCR 1254)

With respect to minimum clearance requirements, 14 CCR 1254 presents guidelines pertaining to non-exempt utility poles. The project structures would be exempt from the clearance requirements, with the exception of cable poles and dead-end structures.

The firebreak clearances required by 14 CCR 1254 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from the minimum clearance requirements by the provisions of 14 CCR 1255 or PRC 4296. The radius of the cylindroid is 10 feet, which is measured horizontally from the outer circumference of the specified pole or tower, with the height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space would be treated as follows:

At ground level: Remove flammable materials, including ground litter, duff, and dead or desiccated vegetation that would propagate fire.

From 0 to 8 feet above ground level: Remove flammable trash, debris, or other materials, grass, and herbaceous and brush vegetation. Remove all limbs and foliage of living trees up to a height of eight feet.

From 8 feet to the horizontal plane of highest point of the conductor attachment: Remove dead, diseased, or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the State Hazardous Waste Management Program, which is similar to but more stringent than the federal RCRA program. The act is implemented by regulations contained in Title 26 CCR, which describes the following required aspects for the proper management of hazardous waste:

Identification and classification;

Generation and transportation;

Design and permitting of recycling, treatment, storage, and disposal facilities;

Treatment standards;

Operation of facilities and staff training; and

Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to

the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substances and Control (DTSC).

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Senate Bill 1082 (1993) created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are as follows:

- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs (i.e., Tiered Permitting);
- Aboveground Petroleum Storage Tank Program;
- Hazardous Materials Release Response Plans and Inventory Program (i.e., Hazardous Materials Disclosure or “Community-Right-To-Know”);
- California Accidental Release Prevention Program (Cal ARP);
- Underground Storage Tank (UST) Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses in complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA. The CUPA in Kern County is the Environmental Health Services Division of the Kern County Public Health Services Department.

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) was created in 1991 and unified California’s environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), State Water Resource Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), CalRecycle, DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA “umbrella” for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Their mission is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality.

Department of Toxic Substances and Control

DTSC, a department of Cal/EPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the Federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

USC 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

California Office of Emergency Services

In order to protect public health and safety, and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing statewide standards for business and area plans relating to the handling and release, or threatened release, of hazardous materials. The OES requires that basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and health risks) be available to firefighters, public safety officers, and regulatory agencies. Typically, this information should be included in business plans in order to prevent or mitigate damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code, Article 1—Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2—Hazardous Materials Management (Sections 25531 to 25543.3).

Title 19 CCR, Public Safety, Division 2, Office of Emergency Services, Chapter 4 - Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for hazardous materials business plans. These plans must include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 to 2729.7, (2) emergency response plans and procedures in accordance with Section 2731, and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the State. Each business will prepare a hazardous materials business plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance;
- 55 gallons of a liquid;
- 200 cubic feet of compressed gas;
- A hazardous compressed gas in any amount; or
- Hazardous waste in any quantity.

California Occupational Safety and Health Administration

California Occupational safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol (CHP), is required by the laws and regulations of State of California Vehicle Code Section 3200.5 for transportation of either:

Hazardous materials shipments for which the display of placards is required by State regulations; or

Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the CHP under the authority of the State Vehicle Code. Transportation of explosives generally requires consistency with additional rules and regulations for routing, safe stopping distances, and inspection stops (14 CCR 6 [1] [1150–1152.10]). Inhalation hazards face similar, more restrictive rules and regulations (13 CCR 6 [2.5] [1157–1157.8]). Transportation of radioactive materials is restricted to specific safe routes.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies pertaining to the avoidance of hazards and adverse effects related to hazardous materials. The policies, goals, and implementation measures in the Kern County General Plan related to hazards and hazardous materials that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 1. Land Use, Open Space and Conservation Element

1.3 Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries and property damage, and minimize economic and social diseconomies resulting from natural disaster by directing development to areas that are not hazardous.

Policy

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes 2.6–2.9 and Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn

Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in an unmitigated significant impact.

Chapter 2. Circulation Element

2.5.4 Transportation of Hazardous Materials

Transportation-related accidents and spills of hazardous materials pose a serious threat to the traveling public and nearby sensitive land uses. Transportation of hazardous materials poses a short-term threat to public health.

Goal

Goal 1: Reduce risk to public health from transportation of hazardous materials.

Policies

Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.

Policy 2: Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.

Implementation Measure

Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.

Chapter 4. Safety Element

4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

Implementation Measure

Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.

4.9 Hazardous Materials

Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.4.5 Solar Energy Development

Policy

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Land Use, Open Space, and Conservation Element

1.1 Physical Constraints

Policy

Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.

1.4. Public Facilities and Services

Policy

Policy 6: The County will ensure adequate fire protection to all Kern County residents.

Kern County Multi-Hazard Mitigation Plan

The Kern County Multi-Hazard Mitigation Plan was last updated in 2020. The Plan was developed by a Hazard Mitigation Planning Committee and identifies goals, objectives and actions pertaining to mitigating impacts from identified natural hazards. The public at large had an opportunity to comment prior to the completion of the Plan's final draft. FEMA realizes the importance of mitigation planning and offers incentives to communities that develop one. By following FEMA guidelines for approval of this plan, Kern County can be eligible for grant funding intended for mitigation projects.

Kern County Wildland Fire Management Plan

The Kern County Wildland Fire Management Plan documents the assessment of wildland fire situations throughout the State Responsibility Areas within the County. The Kern County Fire Department Wildland Fire Management Plan provides for systematically assessing the existing levels of wildland protection services and identifying high-risk and high-value areas that are potential locations for costly and damaging wildfires. The goal of the plan is to reduce costs and losses from wildfire by protecting assets at risk through

focused pre-fire management prescriptions and increasing initial attack success. Based on this assessment, preventive measures are implemented, including the creation of wildfire protection zones.

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2019 California Fire Code and the 2018 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees.

Kern County Fire Department Unit Strategic Fire Plan

The Kern County Fire Department (KCFD) 2020 Unit Strategic Fire Plan is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. The plan gives an overview of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69 percent of Kern County areas are within a SRA. The County is broken up into six different fuel management areas, Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley.

Fire Prevention Standard No. 503-507 Solar Panels

The Kern County Fire Department Fire Prevention Division adopted Standard No. 503-507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 2016 CFC and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal's Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2021).

Kern County Public Health Services Department/Environmental Health Services Division

The County of Kern Environmental Health Services Division of the Public Health Services Department is the CUPA for the project area, which provides site inspections of hazardous materials programs (above ground storage tanks, USTs, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the California Fire Code). This Department also provides emergency response to hazardous materials events, performing health and environmental risk assessment and substance identification.

Kern County and Incorporated Cities Hazardous Waste Management Plan

In response to the growing public concern regarding hazardous waste management, State Assembly Bill 2948 enacted legislation authorizing local governments to develop comprehensive hazardous waste management plans. The intent of each plan is to ensure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within the local government's jurisdiction.

The Kern County and Incorporated Cities Hazardous Waste Management Plan (Hazardous Waste Plan) was first adopted by Kern County and each incorporated city before September 1988 and was subsequently approved by the State Department of Health Services. The Hazardous Waste Plan was updated and incorporated by reference into the Kern County General Plan in 2004 as permitted by Health and Safety Code Section 25135.7(b) and, thus, must be consistent with all other aspects of the Kern County General Plan.

The Hazardous Waste Plan provides policy direction and action programs to address current and future hazardous waste management issues that require local responsibility and involvement in Kern County. In addition, the Hazardous Waste Plan discusses hazardous waste issues and analyzes current and future waste generation in the incorporated Cities, County, and State and federal lands. The purpose of the Hazardous Waste Plan is to coordinate local implementation of a regional action to affect comprehensive hazardous waste management throughout Kern County. The action program focuses on development of programs to equitably site needed hazardous waste management facilities; to promote onsite source reduction, treatment, and recycling; and to provide for the collection and treatment of hazardous waste from small-quantity generators. An important component of the Hazardous Waste Plan is the monitoring of hazardous waste management facilities to ensure compliance with federal and State hazardous waste regulations.

4.9.4 Impacts and Mitigation Measures

Methodology

The methodology for determining impacts relating to hazardous materials focuses on (1) the potentially significant impacts related to the routine transport, use, or disposal of hazardous materials and the release of hazardous materials into the environment; and (2) proposed project components that could result in environmental contamination.

The methodology for determining impacts relating to wildland fires focuses on the fire severity at the project site and the surrounding areas based on existing state and local maps and land characteristics.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to hazards and hazardous materials.

A project would have a significant impact related to hazards and hazardous materials if it would:

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school;
- d. 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, would it create a significant hazard to the public or the environment;
- e. For a project located within the adopted Kern County Airport Land Use Compatibility Plan, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan;
- g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires;
- h. Would implementation of the project generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste?

Specifically, would the project exceed the following qualitative threshold:

The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:

- i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and
- ii. Are associated with design, layout, and management of project operations; and
- iii. Disseminate widely from the property; and
- iv. Cause detrimental effects on the public health or wellbeing of the majority of the surrounding population.

Project Impacts

Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction

The Project would develop and construction a photovoltaic solar facility and associated infrastructure. Project construction activities would involve the use and transportation of hazardous materials such as fuels, asphalt, lubricants, toxic solvents, pesticides, and herbicides. Construction equipment generally contains limited amounts of hazardous materials such as diesel fuel, hydraulic oil, lubricants, grease, solvents, cleaners, adhesives, paints, and other petroleum-based products. The routine use or an accidental spill of hazardous materials could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment. Project construction activities would occur in accordance with all applicable local standards set forth by the County, as well as State and federal health and safety

requirements that are intended to minimize hazardous materials risk to the public, such as Cal/OSHA requirements, the Hazardous Waste Control Act, the California Accidental Release Protection Program, and the California HSC. For hazardous materials used during construction, contractors, in accordance with State regulations, would be required to properly use and store materials in appropriate containers with secondary containment to contain a potential release. The CFC would also require measures for the safe storage and handling of hazardous materials.

Construction contractors would be required to prepare a SWPPP for construction activities in compliance with the NPDES General Construction Permit requirements. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, equipment and fuel storage; protocols for responding immediately to spills; and describe BMPs for controlling site runoff. See **Section 4.9, *Hydrology and Water Quality***, of this Draft EIR for more details. In addition, the transportation of hazardous materials from demolition and construction activities are regulated by the DOT and Caltrans. Together, federal and State agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the risk of accidental release.

Finally, in the event of a substantial accidental spill or release of a hazardous material at the Project Site that requires agency notification, a coordinated response with federal, State, and local levels would occur. Construction staff are directed in how to handle such a situation, including containment and who to contact if such a situation occurs. Mitigation Measure MM 4.9-1, which requires the preparation of a Hazardous Materials Business Plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.

As discussed in Subsection 4.9.2, *Environmental Setting*, the Project Site was historically used for agricultural purposes. Therefore, there is a potential that agricultural-related chemicals, such as pesticides, herbicides, and fertilizers, may have been used and stored on-site. In addition, historical oil field operations in the vicinity of the project site may have contributed to contamination on the site. The Phase I ESA concluded that the pesticides likely have a low potential to exceed regulatory action levels for agricultural or commercial properties and the oil and water disposal wells are down gradient from the project site. Implementation of Mitigation Measure 4.9-2 would require the avoidance of the onsite impacted soil and agricultural pond which would reduce the impacts of chemical exposure to onsite workers and operators. The release of agricultural-related chemicals to create a significant hazard to the public or the environment would be reduced to a less than significant level.

Operations

The Project would consist of solar modules, transformers and battery storage; however, modules made with cadmium telluride and crystalline silicon and batteries do not result in emissions during their normal operations and accidental breakage is unlikely. In addition, all mineral oil filled transformers would be equipped with spill containment areas as required by regulation and battery storage would be in accordance with OSHA requirements such as inclusion of ventilation, acid resistant materials, and spill response supplies. All hazardous materials would be disposed of in accordance with RCRA and State Hazardous Waste Management Program requirements. Although the Project would develop a renewable energy facility on the Project Site, resulting in an increased use of commercially available potentially hazardous materials, the use of these substances is subject to applicable federal, State, and local health and safety laws and

regulations that are intended to minimize health risk to the public associated with hazardous materials. The Project would not use substantial quantities of hazardous materials or generate substantial quantities of hazardous materials requiring transport during operations and is expected to be classified as a Small Quantity Generator of hazardous wastes.

The Project would be expected to use limited hazardous materials and substances which would include herbicides and pesticides to control vegetation on the Project Site. Large quantities of these materials are not expected to be stored on-site. Storage of hazardous materials is regulated by applicable federal, State, and local regulations. It is also anticipated that water would be required for solar panel washing and equipment washing. Chemicals would not be added to the water used for O&M activities. Compliance with these requirements would serve to minimize health and safety risks to people or structures associated with routine use, transport, and disposal as well as accidental release of or exposure to hazardous materials. Project operation would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and impacts would be less than significant.

Decommissioning

At the end of the Project's operational term, the project proponent may determine that the Project should be decommissioned and deconstructed, or it may seek an extension of its conditional use permits. The proponent will work with the County to ensure decommissioning of the Project after its productive lifetime complies with all applicable local, State, and federal requirements. The Project would include BMPs to ensure the collection and recycling of modules and to avoid the potential for modules to be disposed of as municipal waste. All decommissioning would occur within the Project Site and previous disturbance limits, and would involve similar, though reduced construction equipment and activities.

Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off site to be recycled or disposed of at an appropriately licensed disposal facility. Site infrastructure would be removed, including fences and concrete pads that may support the inverters, transformers, and related equipment. The exterior fencing and gates would be removed, and materials would be recycled to the extent feasible. Project roads would be restored to their pre-construction condition to the extent feasible unless the landowner elects to retain the improved roads for access throughout the property. A collection and recycling program would be utilized to promote recycling of Project components and minimize disposal in landfills.

Largely, Project facilities can be refurbished and sold, are recyclable, or can be resold as scrap material. Panels typically consist of silicon, glass, and an aluminum frame. Tracking systems (not counting the motors and control systems) typically consist of aluminum, steel, and concrete. All these materials can be recycled. Fuel, hydraulic fluids, and oils would be transferred directly to a tanker truck from the respective tanks and vessels. Storage tanks/vessels would be rinsed and transferred to trucks per standard BMPs. All material that could not be salvaged would be appropriately disposed of at an authorized site in accordance with applicable laws and regulations. It is anticipated that all oils would be recycled at an appropriate facility. Batteries would be recycled per manufacturer recommendations specific to the battery technology and consistent with regulatory standards.

Site personnel involved in handling these materials would be trained with proper handling techniques. Containers used to store hazardous materials would be inspected regularly for any signs of failure or leakage. Transportation of the removed hazardous materials would comply with regulations for transporting hazardous materials, including those set by the DOT, USEPA, DTSC, CHP, and California State Fire

Marshal.

Numerous recyclers for the various materials to be used on the Project Site operate in Kern County. Metal, scrap equipment, and parts that do not have free-flowing oil can be sent for salvage. Equipment containing any free-flowing oil from equipment would be managed as used oil, which is a hazardous waste in California. Decommissioning would comply with federal, state, and local standards and all regulations that exist when the Project is decommissioned. Upon removal of the Project components, the site would be returned to conditions generally consistent with the existing (pre-development) conditions.

Compliance with the applicable regulations would ensure Project decommissioning would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials, and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation and access road would be extended westerly to the substation and northerly to King Road, respectively. Conditions within these areas are similar to the overall project area and the mitigation measures listed below would be implemented as applicable. In addition, there is an existing gas-pipeline that is within an easement near the proposed gen-tie route. All construction in this area would comply to all safety requirements and the potential for rupture or other safety impacts is minimal. Thus, impacts in this regard would be less than significant.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste.

Mitigation Measures

MM 4.9-1: During the life of the project, including decommissioning, the project proponent shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System (CERS) at <http://cers.calepa.ca.gov/> for review and acceptance by the Kern County Environmental Health Services Division/Hazardous Materials Section. The HMBP shall:

- a. Delineate hazardous material and hazardous waste storage areas
- b. Describe proper handling, storage, transport, and disposal techniques
- c. Describe methods to be used to avoid spills and minimize impacts in the event of a spill
- d. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation
- e. Establish public and agency notification procedures for spills and other emergencies including fires
- f. Describe federal, state, or local agency coordination, as applicable, and clean-up efforts that would occur in the event of an accidental release.
- g. Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site

The project proponent shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.

MM 4.9-2: The impacted soil area near the eastern boundary of the site with impacted soil which served as a land farm and its associated settling pond shall be avoided in its entirety during construction, operation, and decommissioning activities.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 and MM 4.9-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.9-2: The project would 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

The Phase I ESA included a review of local, State, and Federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources, a reconnaissance of the Project Site to review use and current conditions and to check for the storage, use, production or disposal of hazardous or potentially hazardous materials, and interviews with persons and agencies knowledgeable about current and past site use. As previously discussed in Subsection 4.9.2, Environmental Setting, the Phase I ESA did not identify any recognized environmental conditions (REC)s associated with the Project Site. However, the Phase I ESA did identify historical agricultural use of the project and historical oil field operations in the vicinity of the project site as DMCs and recommended that limited soil sampling be conducted for TPH, OCPs and arsenic to ensure that future occupants of the on-site buildings, construction workers and others are not exposed to elevated concentrations of pesticides, if present. Implementation of Mitigation Measure 4.9-2, which requires avoidance of impacted soil areas and the agricultural pond would ensure that the risk of a release of hazardous materials into the environment during construction is less than significant.

As discussed in Impact 4.9-1 above, Project construction activities would involve the use and transportation of hazardous materials such as fuels, asphalt, lubricants, toxic solvents, pesticides, and herbicides. Construction equipment generally contains limited amounts of hazardous materials such as diesel fuel, hydraulic oil, lubricants, grease, solvents, cleaners, adhesives, paints, and other petroleum-based products. Project construction activities would occur in accordance with all applicable local standards set forth by the County, as well as State and federal health and safety requirements that are intended to minimize hazardous materials risk to the public, such as Cal/OSHA requirements, the Hazardous Waste Control Act, the California Accidental Release Protection Program, and the California HSC. For hazardous materials used during construction, contractors, in accordance with State regulations, would be required to properly use and store materials in appropriate containers with secondary containment to contain a potential release. Compliance with all applicable regulations would ensure that the risk of a release of hazardous materials

into the environment during construction is less than significant.

Operation

Project operations would consist of limited hazardous materials on the site. As discussed in Impact 4.9-1 above, any routine transport, use, and disposal of these materials during Project operations must adhere to federal, State, and local regulations for transport, handling, storage, and disposal of hazardous substances. Furthermore, hazardous materials/chemicals such as herbicides and pesticides in low quantities do not pose a significant threat related to the release of hazardous materials into the environment.

Under normal operations, photovoltaic solar facilities do not store or generate hazardous materials in quantities that would represent a risk to offsite receptors. In addition, the Project would include preventative measures, such as energy management systems and building management systems to reduce the potential for accidents to occur. Nevertheless, because lithium-ion solar facilities do store energy, a battery thermal runaway can occur if a cell, or area within a cell, achieves elevated temperatures due to thermal failure, mechanical failure, internal/external short circuiting, and electrochemical abuse. In this event, state-of-the-art fire and safety systems would mitigate the thermal runaway event.

The solar storage containers would have a fire rating in conformance with NFPA and County standards and specialized fire suppression systems. The Project would utilize pre-engineered battery storage systems listed under UL 9540 or Battery Energy Storage System (BESS) tested in compliance with UL 9540A. UL 9540 contains safety standards for the system's construction (e.g., frame and enclosure, including mounting, supporting materials, barriers and more); the insulation, wiring, switches, transformers, spacing and grounding; safety standards for performance of over twenty different elements, such as tests for temperature, volatility, impact, overload of switches, and an impact drop test; and standards for manufacturing, ratings, markings, and instruction manuals. In addition to the many individual standards referenced, CFC compliance requires a Failure Mode and Effects Analysis be performed and requires a test to ensure safe compatibility of the system's parts. This includes the UL 1973 standard, in which a battery manufacturer must prove that a failed cell inside will not cause a fire outside the system. The Project's compliance with the CFC, UL 9540/9540A requirements, and industry standards for adequate separations, cascading protections, and suppression systems to limit failure to a single cell or module. In the unlikely event of thermal runaway, the Project's preventative measures and fire and safety systems are designed to limit the event to a single battery module as well as reduce the duration and intensity of an event, if it occurs.

The Project is also subject to the requirements of Chapter 12 of the CFC which requires that all BESS use an Energy Management System for monitoring and balancing cell voltages, currents and temperatures. The system must transmit an alarm signal if potentially hazardous temperatures or other conditions such as short circuits, over voltage or under voltage, are detected. The CFC also requires the use of appropriate fire detection and suppression systems, which will be incorporated into each of the Project's BESS enclosures.

As previously stated, an HMBP will be prepared and implemented by the Project as required in Mitigation Measure 4.9-1. The HMBP would be required to also include an emergency response plan which is designed to minimize hazards to humans and the environment from a sudden release of hazardous waste, fires, or explosions. The emergency response plan requires immediate action take place if an event were to occur. As the KCFD would have undergone training prior to Project operations, immediate action would be followed in accordance with the emergency response plan.

Adherence to regulations and standard protocols during Project operation would minimize and reduce the potential for hazardous materials impacts from the BESS. Therefore, Project operation would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment, and impacts would be less than significant.

Removal and/or maintenance of vegetation may require pesticide and herbicide use during both construction and operation. If not handled properly, use of these products could create a hazard to the public (construction workers, maintenance employees, and nearby residences), resulting in a potentially significant impact. Mitigation Measure MM 4.9-3 would require licensed herbicide operators on the project site and keep a record of using herbicides during appropriate weather conditions. MM 4.9-3 would reduce impacts related to use of pesticides and herbicides to a less-than-significant level.

Overall, adherence to regulations and standard protocols during the storage, transportation, and usage of any hazardous materials, and implementation of Mitigation Measures MM 4.9-1 and 4.9-3 would minimize or reduce potential impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials, to a less-than-significant level.

Decommissioning and Disposal

As stated under Impact 4.9-1, the proponent will work with the County to ensure decommissioning of the Project after its productive lifetime complies with all applicable local, State, and federal requirements. The Project would include BMPs to ensure the collection and recycling of modules and to avoid the potential for modules to be disposed of as municipal waste. All decommissioning would occur within the Project Site and previous disturbance limits, and would involve similar, though reduced construction equipment and activities. Site personnel involved in handling materials associated with decommissioning would be trained with proper handling techniques. Compliance with applicable federal, State, and local regulations would ensure that Project decommissioning would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accidental conditions involving the release of hazardous materials into the environment, and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation and access road would be extended westerly to the substation and northerly to King Road, respectively. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Conditions within these areas are similar to the overall project area and the MM 4.9-1 and MM 4.9-2, as well as the mitigation listed below would be applies as applicable. All construction and any operational activities that occur in these areas also would comply to all safety requirements and be under the same HMBP. Thus, impacts in this regard would be less than significant.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste.

Mitigation Measures

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, and MM 4.17-1 (see Section 4.17, Utilities and System Services for full mitigation measure text) would be required.

MM 4.9-3: The project proponent/operator shall continuously comply with the following:

- a. The construction contractor or project personnel shall use herbicides that are approved for use in California, and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use.
- b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.
- c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.
- d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water.
- e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated.
- f. A written record of all herbicide applications on the site, including dates and amounts, shall be furnished annually to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, and MM 4.17-1 impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.9-3: The project would emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

The project site is not located within 0.25-mile of any school. The nearest school to the project site is the A.M Thomas Middle School, located approximately 15 miles southeast of the project site. Therefore, there would be no impact related to hazardous emissions within 0.25-mile of a school.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project boundary and the access road would be extended northerly to connect to King Road. The construction and operation of the

Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Completion of these project elements would not occur within 0.25 miles of any existing or proposed school. Impacts in this regard would be less than significant.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste..

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.9-4: The project would 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, would create a significant hazard to the public or the environment.

As discussed above, the project site is not identified in any of the California hazardous materials databases. Searches were completed for the subject parcels in the following hazardous materials lists: Cal/EPA's Cortese List including the California Department of Toxic Substances and Control's EnviroStor database of hazardous substances release sites; and Geotracker, the California database of leaking underground storage tanks (DTSC, 2022; SWRCB, 2022). Additionally, the Phase 1 Environmental Site Assessment for the project site revealed no evidence of RECs, controlled RECs (CREC), or historical RECs (HREC) in connection with the project site (S2S, 2021). Therefore, impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to connect to the existing PG&E facilities and the access road would be extended northerly to King Road. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These areas are not within an area that is listed pursuant to Government Code Section 65962.5. Impacts in this regard would be less than significant.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.9-5: The project would result in a safety hazard or excessive noise for people residing or working in the project area, for a project located within the adopted Kern County Airport Land Use Plan.

The project area is not located within an area covered by the Kern County Airport Land Use Compatibility Plan (ALUCP). The nearest airport to the project site is Lost Hills Airport, located approximately 14 miles southeast of the project site. Safety hazards are not anticipated for people residing or working in the project area with respect to the project's proximity to an airport. Therefore, there are no impacts.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation, access road to King Road, and modifications to the existing Arco Substation are in the same area as the other project components, and hence, are not within an adopted Kern County Airport Land Use Plan area. Neither construction workers or those needed to maintain the gen-tie line and roadway, or people residing or working in the project area would be subject to substantial increase of safety hazards or to noise. Impacts would be less than significant in this regard.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste.

Mitigation Measures

No mitigation would be required.

Level of Significance

No impacts for the project. Impacts would be less than significant for the PG&E Interconnection Facilities, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.9-6: The project would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

The project would not interfere with any existing emergency response plans, emergency vehicle access, or personnel access to the project site. The project site is located in a remote area with several alternative access roads allowing access to the project site in the event of an emergency. Access would be maintained throughout construction, and appropriate detours would be provided in the event of potential road closures. Therefore, impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation, access road to King Road, and improvements to the existing Arco Substation do not have the potential to impair implementation of, or physically interfere with an emergency

response or evacuation plan. These project elements are in remote areas and are not within evacuation routes. Impacts would be less than significant in this regard.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.9-7: The project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The project site is not located within a high fire hazard severity zone (CAL FIRE, 2007); see **Section 4.18, Wildfire**. However, there is sparse vegetation onsite and site preparation would involve the removal of additional vegetation, although natural vegetation may be maintained if it does not interfere with project construction or the health and safety of onsite personnel. The project would also include a BESS component which, while they generally burn with difficulty, can in fact burn or become damaged by fire and generate fumes and gases that are extremely corrosive. Dry chemical, carbon dioxide, and foam are the preferred methods for extinguishing a fire involving batteries as water is not useful in extinguishing battery fires. As discussed further in Section 4.14, *Public Services*, of this EIR, the project proponent would implement Mitigation Measure MM 4.14-1, which would require the preparation and submittal of a Fire Safety Plan to the KCFD for review and approval. The purpose of the Fire Safety Plan would be to eliminate causes of fire, prevent loss of life and property by fire, to comply with County and County Fire Protection District standards for solar facilities, and to comply with the OSHA standard of fire prevention, 29 CFR 1910.39. The fire safety plan would address fire hazards of the different components of the project, including the BESS, and would include BMPs to reduce the potential for fire and extinguishment techniques if a fire were to occur.

The project site is not adjacent to urbanized areas. While the project is not anticipated to significantly increase the risk of wildfire, Mitigation Measure MM 4.14-1 would be implemented to ensure a fire safety plan for construction, operation and decommissioning of the project is incorporated as part of the project. With mitigation, potential impacts from wildfire would be reduced to a less-than-significant level.

See also Section 4.18, *Wildfire*, of this EIR for additional discussion of wildfire issues.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation, access road to King Road, and improvements to the existing Arco Substation are in the same vicinity as the other project elements and not within an area subject to substantial dangers from wildfire. These areas are characterized by grazing and disturbed land with vegetative patterns similar to the balance of the site. Vegetation does not consist of thick brush or other vegetative patterns that

would be particularly susceptible to uncontrollable wildfire. Thus, these project elements would not substantially increase or exacerbate the potential hazards associated with wildfire in the area. Impacts would be less than significant in this regard.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to hazardous materials.

Mitigation Measures

Implement Mitigation Measure MM 4.14-1 (see Section 4.14-1, *Public Services*, for full text).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PGE's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.9-8: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, would the proposed project exceed the following qualitative threshold: the presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the proposed project is significant when the applicable enforcement agency determines that any of the vectors:

- i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; or**
- ii. Are associated with design, layout, and management of proposed project operations; or**
- iii. Disseminate widely from the property; or**
- iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.**

Project-related infrastructure is not expected to result in features or conditions that could potentially provide habitat for vectors such as mosquitoes, flies, cockroaches, or rodents (such as standing water, agricultural products, or agricultural waste). The project site would produce a small amount of solid waste from construction and operational activities. This may include paper, food waste from worker meals, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation waste. These wastes would be segregated, where practical, for recycling. Non-recyclable wastes such as food scraps would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Construction and operation

of the proposed solar arrays and associated facilities would not produce excessive wastes, standing water, or other features that would attract nuisance pests or vectors. Therefore, impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project site and the access road would extend northerly to King Road. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These aspects of these project elements that would create or exacerbate the potential hazards associated with generation of vectors in this area. Impacts in this regard would be less than significant.

The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to hazardous materials.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities with PGE's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, multiple projects, including several utility-scale solar and wind energy production facilities, are proposed throughout Kern County. As shown in **Table 3-4: Cumulative Project List**, other solar energy projects are either operational, in construction or proposed within the region. The geographic scope of impacts associated with hazardous materials generally encompasses the project sites and a 0.25-mile-radius area around the project sites. A 0.25-mile-radius area allows for a conservative cumulative analysis that ensures that all potential cumulative impacts will be assessed. Similar to other potential impacts, such as those related to geology and soils, risks related to hazards and hazardous materials are typically localized in nature since they tend to be related to onsite existing hazardous conditions and/or hazards caused by the project's construction or operation. A geographic scope of a 0.25-mile-radius area also coincides with the distance used to determine whether hazardous emissions or materials would have a significant impact upon an existing or proposed school, as discussed above. The project's compliance with Mitigation Measure MM 4.9-1, MM 4.9-2 and MM 4.9-3 is similar to existing regulatory requirements that other projects would be required to adhere to and would avoid hazardous material-related impacts from occurring at any of the schools of the area.

Impacts regarding the handling, use, and/or storage of hazardous materials would be project specific and would not cumulatively contribute to impacts. An accident involving a hazardous material release during

project construction or operation through upset or accident conditions including site grading and the use and transport of petroleum-based lubricants, solvents, fuels, batteries, herbicides, and pesticides to and from the project site would be location specific. Conformance with existing State and County regulations, as well as project safety design features and the implementation of Mitigation Measure MM 4.9-1, MM 4.9-2 and MM 4.9-3 identified above would further reduce cumulative impacts. In addition, implementation of appropriate safety measures during construction of the project, as well as other cumulative projects, would reduce the impact to a level that would not contribute to cumulative effects. Given the minimal risks of hazards at the project site, cumulative impacts are unlikely to occur. Therefore, impacts would not be cumulatively significant.

Hazardous materials to be used during decommissioning and removal activities are of low toxicity and would consist of fuels, oils, and lubricants. Because these materials are required for operation of construction vehicles and equipment, BMPs would be implemented to reduce the potential for or exposure to accidental spills or fires involving the use of hazardous materials. Impacts from minor spills or drips would be avoided by thoroughly cleaning up minor spills as soon as they occur. While foreseeable projects have the potential to cause similar impacts, it is assumed these projects would also implement similar BMPs. Conformance with existing State and County regulations, as well as implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, of Section 4.14, *Public Services*, (Fire Safety Plan) and MM 4.17-1, of Section 4.17, *Utilities and Service Systems*, (recycling of debris and waste) would further reduce the potential for cumulative impacts. In addition, implementation of appropriate safety measures during construction of the project, as well as any other cumulative project, would reduce the impact to a level that would not contribute to cumulative effects. Therefore, impacts related to hazardous materials would not be cumulatively significant.

The project site is not located within an airport land use plan influence area and thus is not expected to result in any cumulative contribution to hazards associated with airports or airstrip land use plans or otherwise provide any cumulatively considerable air traffic hazards.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project site and the access road would be extended northerly to King Road. The construction and operation of the Interconnection Facilities are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These aspects of the project include installation of poles and suspended wires to conduct electricity to the substation and minimal grading to construct the access road. The access road also would be topped with gravel or otherwise stabilized to minimize erosion and reduce hazards. Accordingly, these elements of the project would require minimal ground disturbance, use of fuels, solvents, and other construction materials. The same mitigation measures as listed throughout this chapter also would be applied, as applicable, to these project elements. Once operational, the gen-tie lines would be managed in accordance with all safety and maintenance requirements including those for construction in proximity to and within an existing utility easement (gas pipeline). Thus, these parts of the project would not create or exacerbate the potential for hazards or hazardous materials incidents. The construction and operation of the PG&E Interconnection Facilities for the transport of renewable energy is anticipated to generate no hazardous waste. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during

construction and operation, including those regulations that relate to hazardous materials. Cumulative impacts in this regard would be less than significant.

Mitigation Measures

Implement of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, and MM 4.17-1 (see Sections 4.14-1, *Public Services*, and 4.17, *Utilities and System Services*, for full text).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, and MM 4.17-1, cumulative impacts would be reduced to less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PGE's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

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Section 4.10

Hydrology and Water Quality

4.10.1 Introduction

This section of the Environmental Impact Report (EIR) describes the hydrological environmental and regulatory settings, addresses potential impacts of the project on hydrology and water quality, and discusses mitigation measures to reduce impacts, where applicable. The information in this section is based on multiple online sources and published documents, as well as the technical documents prepared for the project including, *Hydrology and Water Quality Study* (S2S, 2021), *Azalea Solar Project Water Supply Assessment* (S2S, 2021), and *Biological Resources Technical Report*, located in Appendix J, Appendix K, and Appendix E of this EIR, respectively.

4.10.2 Environmental Setting

Regional Setting

The project site is located on the southern end of the Kettleman Plain sub basin, of the Tulare Lake Watershed in California's Central Valley and is drained by the San Joaquin River. Drainage patterns in the San Joaquin Valley region evolved throughout the Quaternary in response to both valley floor subsidence and sedimentation by multiple streams draining into the valley. Progradation of alluvial fans into the valley produced barriers to the valley's northward drainage, which resulted in the formation of the shallow, hydrologically closed Tulare Lake and Buena Vista Lake basins. Tulare Lake, which no longer exists due to diversions of water sources, was one of the largest of several similar lakes (e.g. Kern and Buena Vista Lakes) in the lower basin and characterized the Valley. Tulare Lake historically received water from the Kern, Tule, and Kaweah Rivers, as well as southern tributaries of the Kings River. Present day water sources to the region include rainfall, natural waterways, and water imported from the State Water Project and Central Valley Project aqueducts. The now dry lake is located approximately 14 miles to the northeast of the project site.

Within the above larger area, the project site is located in an area called the "South Dome" subbasin adjacent to the Kern County Subbasin, which is also in the Tulare Lake Hydrologic Region of the San Joaquin Valley Groundwater Basin. The Kern Subbasin is identified by the California Department of Water Resources (DWR) as ground water basin 5-022.14 and is bounded to the north by the boundary between Kern County and Kings County. The Kern Subbasin is bounded to the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi Mountains, and to the southwest and west by the marine sediments of the San Emigdio Mountains and Coast Ranges.

Kettleman Plain Basin

The Kettleman Plain Subbasin is located in the southwestern portion of Kings County and overlies a portion of the northwest portion of Kern County and is a sub basin within the larger San Joaquin Valley Groundwater Basin. The subbasin is comprised of two parallel northwest trending alluvial plains of Kettleman Plain and Sunflower Valley. Kettleman Plain and Sunflower Valley are connected through a

narrow strip of alluvium through the Dagany Gap, just south of the Kern County line with Kings County. The northwestern border consists of a small portion of the Fresno-Kings County line. The eastern border is the geologic boundary between the Kettleman Plain alluvium and the Pliocene-Pleistocene sandstone and shales of the Kettleman Hills and South Dome, until it reaches the southern boundary of the Devil's Den Water District. The southern boundary is between an area with Sunflower Valley alluvium and the sandstone and shale of the surrounding Coast Range (DWR, 2018).

Climate

The southern Central Valley of California has rainy winters and dry summers characteristic of a Mediterranean climate. The Central Valley has greater temperature extremes than the coastal areas because it is less affected by the moderating influence of the Pacific Ocean.

Most of the rainfall in the project area occurs between November and April when the Gulf Stream shifts southward from northern latitudes. This shift creates a quasi-permanent low-pressure zone over southern California and feeds moisture originating over the Pacific Ocean into the region. This southern shift creates the Mediterranean climate characteristic of southern California.

The Western Regional Climate Center (WRCC) provides climate data derived from stationary weather stations throughout the western United States. WRCC has developed historic data sets for monthly climate for the project area. The data set nearest to the project site is based on weather readings taken from a stationary weather station found Kettleman City, CA. Although the average annual precipitation can vary from year to year, the project site receives approximately 6.64 inches per year. Average temperatures recorded at the Kettleman City, CA weather station from 1955 to 2016 in the unincorporated area of Kern County range from a low of 35.2° Fahrenheit (F) in January to highs of 100.1° F in July (WRCC, 2016). There has been no snowfall recorded at the station. The Kettleman City weather station is approximately 17 miles north of the project site, COOP ID 044534.

Site Hydrology

Surface Hydrology and Drainage

Topography in the project site is relatively flat with elevations that range from approximately 462 feet (140.8 meters [m]) in the southwest portion of the project to approximately 584 feet (178 m) in the northeast portion of the project site. The land generally slopes gently from the northeast towards the southwest throughout the site with the exception of a small hill in the southeast corner of the property. There are no defined natural channels within the project site and during rare but significant storm events, offsite water reaches the project area via sheet flow from the northwest and drains through the site to the south, then off the site, and then east toward the California Aqueduct. Within the project site there is a detention basin that is used to irrigate/spray the field using a grid of aluminum pipes. The field is irrigated to grow vegetation for grazing.

Substation and Access Road Hydrology

Within the area of the substation to the west of the proposed solar field, there are two ephemeral drainages. In addition, there are two additional ephemeral drainages to the northwest of the project site in an area that was contemplated to provide access to the project site. These drainages are discussed in additional detail in *Chapter 4.4 – Biological Resources* and the *Biological Resources Technical Report*. Although this road is

not proposed to be constructed, a gen tie into the substation will be made in proximity to the Drainages A and B. The location of the drainages is shown on **Figure 4.4-5: Drainages Map**.

Drainages A and B are ephemeral and were created incidental to the construction of the Substation and surrounding dirt access roads. Drainage A is a shallow (2 to 4 inch) erosion rill occupies 0.03 acres and is 865 linear feet with flows terminating as sheet flow and originates from a pair of 24-inch culverts that pass storm water from within the Substation. Drainage B is up to 8 inches in depth and occupies 0.03 acres and is 639 linear feet and originates from a series of small culverts north of the substation as well as from natural sheet flow from the west.

Floodplains

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas on its Flood Insurance Rate Maps (FIRMs); FIRMs are discussed in more detail below under Section 4.10.3, Regulatory Setting. The project site is located within the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) map number 06029C0075E, effective September 26, 2008. Approximately 600 acres (94%) of the Site is located in Flood Zone "X," areas of minimal flooding and no standing water. The southern portions of parcels APN 043-210-17 and APN 043-210-18, approximately 40 acres combined, are within Flood Zone "A," areas that correspond to 100-year floodplains (1% chance exceedance probability) without detailed hydraulic analyses, Base Flood Elevations, or depths mapped. Flood flows reaching the project site primarily originate from south of the Site.

Soil Types and Erosion

According to the Soil Survey for Kern County, the project sites consist primarily of Delgado sandy loam and Kimberlina sandy loam. Both soil types have high infiltration rates and low runoff potential when thoroughly wet. The other 12 soils that occur within the project site include Cantua course sandy loam, three classes of Delgado sandy loam, Bitterwater sandy loam, Granoso sandy loam, Catollo-Twisselman saline alkali association, Kimerlina fine sandy loam, Kecksroad silty clay loam, Panoche clay loam, and two classes of Twisselman clay. These soils are discussed in additional detail in the *Biological Resources Technical Report* in Appendix E. The mapped soils within the project site are shown in **Table 4.10-1: On-Site Soils**, below. Generally, sandy soils typically have low cohesion and have a relatively higher potential for erosion when exposed to wind or moving water. Erosion potential onsite based on soil texture, slope length and slope steepness are low. Since the project site has minimal to no vegetation cover, erosion potential is slightly higher than it would be if it was densely vegetated. Conversely, the low topographic relief of the site reduce the erosion potential.

TABLE 4.10-1: ON-SITE SOILS

Map Unit Symbol	Soil Map Description	Hydrologic Soil Group	Drainage Class	Acres and Percent of Project Site	
				Acres	Percent
144	Delgado sandy loam, 5 to 15 percent slopes	D	Somewhat excessively drained	245.1 acre	38.0%
175	Kimberlina sandy loam, 2 to 5 percent slopes	A	Well drained	279.5 acres	42.0%
115	Bitterwater Sandy loam, 9 to 15 percent slopes	A	Well drained	38.8 acre	6.0%
125	Granoso loamy sand, 0 to 2 percent slopes	A	Somewhat excessively drained	6.7 acres	1.0%
129	Carollo-Twisselman saline alkali association, 2 to 15 percent slopes	D	Well drained	15.8 acres	2.5%
174	Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17	A	Well drained	49.3 acres	7.6%
175	Kimberlina fine sandy loam, 0 to 2 percent slopes	A	Well drained	279.5	42.0%
235	Twisselman clay, 0 to 2 percent slopes	C	Well drained	9.6 acres	1.5%
236	Twisselman clay, 2 to 5 percent slopes	C	Well drained	8.9 acres	1.4%

SOURCE: United States Department of Agriculture (USDA), and Natural Resources Conservation Service, 2022.

Note: Acres and percentage of project site is approximate, does not include access road or substation, and is based on NRSC mapping

Hydrologic Soil Groups

The hydrologic soil groups shown in the third column of **Table 4.10-1** above, rate the soils minimum infiltration rate based the soils properties that correlate to saturation levels during a flood event. The characteristics of the soils in each group are discussed below.

Hydrologic Soil Group A - Characterized by soils having high infiltration rates even when thoroughly wetted. Soils consist chiefly of deep, well to excessively drained sands of gravel. The soils have high water transmission and low runoff potential.

Hydrologic Soil Group B - Characterized by having slow infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well-drained soils with moderately coarse textures. These soils have a moderate rate of water transmission.

Hydrologic Soil Group C - Characterized by having slow infiltration rates even when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water or soils with moderately fine to fine textures. These soils have a slow rate of water transmission.

Hydrologic Soil Group D - Characterized by having a very slow infiltration rates when thoroughly wetted and consist chiefly of clay soils with high swelling potential and are in soils with a high permanent water table. These soils may have a clay pan or clay layer at or near the surface, and shallow soils over the nearly impervious materials.

Groundwater Resources

San Joaquin Valley Groundwater Basin

The project site is located in the Kern County Subbasin within the San Joaquin Valley Groundwater Basin (DWR Basin No. 5-022.14). The Kern County Subbasin covers approximately 1,945,000 acres (3,040 square miles) and is bounded to the north by the Kern County line and the Tule Groundwater Subbasin, to the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi Mountains, and to the southwest and west by marine sediments of the San Emigdio Mountains and Coast Range.

The geologic unit the subbasin is located in is moderately to highly permeable and yields large quantities of water to wells and is often indistinguishable from the Tulare and Kern Formations below. With these underlying formations, the unit forms the primary aquifer in the Kern County Groundwater Subbasin. The subbasin is recharged primarily through stream seepage along the eastern subbasin and Kern River (DWR 2006) and via infiltration through the surface including through use of imported recharge water and is highly managed by local and regional agencies including the WDMA and the KCWA. Artificial recharge at groundwater banking facilities throughout the subbasin is also a major source of groundwater recharge. Secondary sources of recharge include return flows from agricultural and municipal irrigation flows from intermittent streams along the subbasin. Groundwater elevations near the Kern River can be highly variable due to managed groundwater recharge and extractions associated with banking projects, and elevations farther from banking operations have more seasonal responses related to pumping and recharge.

To help address the issues of overdraft and help ensure adequate water is available in the future, the Westside Water District/Water Authority (WDWA) has adopted project management actions (PMAs) to help reduce water use and facilitate ground water infiltration. The PMAs and summary of the purpose and benefits are listed below,

TABLE 4.10-2: WESTSIDE WATER DISTRICT/WATER AUTHORITY PROJECT MANAGEMENT ACTIONS

PMA	Purpose	Expected Benefits
Collect Representative Hydrologic Data	Obtain representative data related to aquifer characteristics and groundwater elevation monitoring within the WDMA	<ul style="list-style-type: none"> • Generate data for use in updating native yield/sustainable yield, sentry MTs/Mos, and water budgets. • Improve modeling results and forecasting for both management projects and actions
Water Resource Coordination	Implement focused reduction demand measures, invest in efficient irrigation, coordinate groundwater monitoring and reporting.	<ul style="list-style-type: none"> • Increase reliability and flexibility in water availability, • Increase drought resiliency, • Implement sustainable water strategies for short- and long- term planning.
Conjunctive reuse of Naturally degraded brackish groundwater	Integrate the treatment and conjunctive use of brackish groundwater and oil field	<ul style="list-style-type: none"> • Increase drought resiliency, self-reliance, and flexible integrated water management, • Help protect, maintain, and restore important ecosystems, \

	produced water for potential multiple beneficial uses.	<ul style="list-style-type: none"> • Be an alternative water source for disadvantaged communities, • Increase WDMA flexibility and regulatory efficiency, • Mitigate the rate of subsidence by banking and conjunctive reuse of oilfield produced water, • Provide a new reliable local source of quality water derived from groundwater that is currently unsuitable for beneficial use.
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The PMAs developed for WDMA Management Areas, as presented above, largely incorporate conjunctive use management, which is the combined management of surface water and groundwater resources. Conjunctive use programs have been developed to capture and transport surface water during wet years for use in recharging the local groundwater and offset use of groundwater pumping. Projects such as interties, pipelines, and recharge basins have been developed and implemented throughout the Kern Subbasin to deliver, bank, and return surface water, as well as replenish aquifers to better prepare for and manage during times of dry periods when beneficial users are more reliant on groundwater.

The San Joaquin Valley groundwater basin is within the Central Valley Region, which includes about 40% of the land in California and stretches from the Oregon border to the Kern County/Los Angeles County line. It is bound by the Sierra Nevada Mountains on the east and the Coast Range on the west. The Region is divided into three basins: the Sacramento River Basin, the San Joaquin River Basin, and the Tulare Lake Basin.

Groundwater Quality

The Water Quality Control Plan for the Central Valley Region is the Basin Plan that covers Kern County. This basin plan covers only the Tulare Lake Basin. The Sacramento River Basin and the San Joaquin River Basin are covered in a separate basin plan. The Tulare Lake Basin comprises the drainage area of the San Joaquin Valley south of the San Joaquin River. Surface water from the Tulare Lake Basin only drains north into the San Joaquin River in years of extreme rainfall.

The Tulare Lake Basin Plan for the Central Valley RWQCB includes water quality objectives for groundwaters, which outlines protection measures for groundwater within the Tulare Lake Region. The plan outlines policies and regulations for groundwater basin water quality and management within the RWQCB jurisdiction. The RWQCB board has regulatory control over groundwater supply and recharge as well as other state agencies including the State Water Resources Control Board (SWRCB), Division of Water Resources (DWR), and United States Environmental Protection Agency (USEPA), and Bureau of Land Management (BLM). Under the basin plan, the Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all projects that disturb one or more acres within Kern County, even though many of the waters within Kern County are not technically subject to federal regulations as they are closed systems that never contact oceans or other waters of the US.

4.10.3 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA required states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint – source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Board (RWQCBs). The project site is within the Central Valley RWQCB. Projects that disturb one or more acres, including the proposed project, are required to obtain NPDES coverage under the Construction General Permits.

Section 401, Water Quality Certification. Section 401 of the CWA requires that, prior to issuance of any federal permit or license, any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in discharges into waters of the U.S., must be certified by the state, as administered by the RWQCB. This certification ensures that the proposed activity does not violate state and/or federal water quality standards.

Section 402, National Pollutant Discharge Elimination System. Section 402 of the CWA authorizes the State Water Resources Control Board (SWRCB) to issue a NPDES General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ), referred to as the “General Construction Permit.” Construction activities can comply with and be covered under the General Construction Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.

NPDES regulations are administered by the Central Valley RWQCB at the project site.

Section 404, Discharge of Dredged or Fill Materials. Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material in waters of the U.S., including wetlands. For purposes of section 404 of the CWA, the limits of non-tidal waters extend to the ordinary high-water line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. When an application for a Section 404 permit is made the applicant must show it has:

Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;

Minimized unavoidable impacts on waters of the U.S. and wetlands; and

Provided mitigation for unavoidable impacts.

Section 404 of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A water quality certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for water quality certification (or waiver thereof) from the Lahontan RWQCB. Project activities would adhere to state and federal water quality standards and would be in compliance with Sections 401 and 404 of the CWA.

Section 303, Water Quality Standards and Implementation Plans. Section 303(d) of the CWA (33 U.S. Code 1250, et seq., at 1313(d)) requires states to identify “impaired” water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to the U.S. Environmental Protection Agency for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of total maximum daily loads (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

National Flood Insurance Act

FEMA is responsible for managing the National Flood Insurance Program (NFIP), which makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The NFIP, established in 1968 under the National Flood Insurance Act, requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, a requirement that new structures in the 100-year flood zone be elevated to or above the 100-year flood level (known as base flood elevation), and a requirement that subdivisions be designed to minimize exposure to flood hazards.

To facilitate identifying areas with flood potential, FEMA has developed FIRMs that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements. Kern County is a participating jurisdiction in the NFIP and, therefore, all new development must comply with the minimum requirements of the NFIP.

State

Department of Water Resources

The major responsibilities of the California Department of Water Resources (DWR) include preparing and updating the California Water Plan to guide development and management of the state's water resources; planning, designing, constructing, operating, and maintaining the State Water Resources Development System; regulating dams; providing flood protection; assisting in emergency management to safeguard life and property; educating the public; and serving local water needs by providing technical assistance. In addition, DWR cooperates with local agencies on water resources investigations, supports watershed and river restoration programs, encourages water conservation, explores conjunctive use of ground and surface water, facilitates voluntary water transfers, and, when needed, operates a state drought water bank.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), passed in 1969, requires protection of water quality by appropriate designing, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine

regions, each overseen by a RWQCB. The SWRCB is the primary State agency responsible for protecting the quality of the State's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing the Clean Water Act Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The basin plans are updated every 3 years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the State," file a report of waste discharge. Absent a potential effect on the quality of "waters of the State," no notification is required. However, the RWQCB encourages implementation of BMPs similar to those required for NPDES storm water permits to protect the water quality objectives and beneficial uses of local surface waters.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires the formation of local-controlled groundwater sustainable agencies in high- and medium-priority groundwater basins. These groundwater sustainability agencies are responsible for developing and implementing a Groundwater Sustainability Plan (GSP). In September 2014, then Governor Brown signed legislation requiring the California's critical groundwater resources be sustainably managed by local agencies. The SGMA gives local agencies the power to sustainably manage groundwater, provides for the creation of regional GSAs and requires GSP to be developed for medium- and high-priority groundwater basins. These basins or subbasins were required to adopt groundwater management plans by 2020 or 2022, depending upon whether the basin is in critical overdraft. GSAs will have until 2040 or 2042 to achieve groundwater sustainability.

The Kern Subbasin is designated a High Priority Basin by DWR due to the historic levels of overdraft from agricultural use, resulting in subsidence and, in some cases, completed disconnection between groundwater and overlying surface water systems. As discussed above, the WDMA is the GSA for the portion of the Kern Subbasin in which the project is located and is a member agency of the KGA, which functions as the GSA for the overall Kern Subbasin. WDMA has developed a Management Area under the KGA Umbrella GSP to meet the regulatory requirements of SGMA.

Streambed Alteration Agreement (California Fish and Game Code)

California Fish and Game Code Section 1602 protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Wildlife (CDFW) in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

Substantially divert or obstruct the natural flow of any river, stream or lake;

Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or

Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

During final engineering and design of a project, if it is determined that any project-related actions would have the potential to necessitate a streambed alteration agreement, such an agreement would be prepared and implemented prior to construction of the project, thus maintaining compliance with Section 1602 of the California Fish and Game Code. A streambed alteration agreement is required if the CDFW determines the activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting the project. The CDFW must comply with CEQA before it may issue a final lake or streambed alteration agreement; therefore, the CDFW must wait for the lead agency to fully comply with CEQA before it may sign the draft lake or streambed alteration agreement, thereby making it final.

Senate Bill 610

SB 610 was passed on January 1, 2002, amending California law to require detailed analysis of water supply availability for large development projects. An SB 610 Water Supply Assessment (WSA) must be prepared if the following three conditions are met:

- The project is subject to CEQA under the California Water Code 10910;
- The project meets criteria to be defined as a “Project” under California Water Code Section 10912; and
- The applicable water agencies current Urban Water Management Plan does not account for the water supply demand associated with the project.

A project would meet the definition of “Project” per California Water Code Section 10912(a) if it is”

- A proposed residential development of more than 500 dwelling units.
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant or industrial part 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;
- A mixed-use project that includes one or more of the projects specifies in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than , the amount of water require by a 500-dwelling unit project.

SB 610 was not originally clear on whether renewable energy developments are subject to SB 610 and require the preparation of a WSA. SB 267 was signed into law on October 8, 2011, amending California’s Water Law to revise the definition of “project” specified in SB 610. Under SB 267, wind and photovoltaic projects that consumed less than 75 acre-feet per year (AFY) of water were not considered to be a “project” under SB 610; subsequently, a WSA would not be required for this type of project. The renewable energy exclusions provided by SB 267 expired in January 2017. Since the language of SB 610 remains unclear on

whether renewable energy projects meet the definition of a “project,” a WSA was prepared for the proposed project.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to hydrology and water quality name. The policies and implementation measures in the Kern County General Plan related to hydrology and water quality that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Land Use, Open Space, and Conservation Element

1.3 Physical and Environmental Constraints

Policies

- Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.
- Policy 8: Encourage the preservation of the floodplain’s flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.
- Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.
- Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.
- Policy 11: Protect and maintain watershed integrity within Kern County.

Implementation Measures

- Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.

- Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.
- Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.
- Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.9 Resources

Policy

- Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

1.10 General Provisions

Implementation Measures

- Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

1.10.6 Surface Water and Groundwater

Policies

- Policy 34: Ensure that water quality standards are met for existing users and future development.
- Policy 40: Encourage utilization of community water system rather than the reliance on individual wells
- Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.
- Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Implementation Measure

Measure Y: Promote efficient water use by utilizing measures such as:

- (i) Requiring water-conserving design and equipment in new construction;
- (ii) Encouraging water-conserving landscaping and irrigation methods; and
- (iii) Encouraging the retrofitting of existing development with water conserving devices.

Kern County Code of Building Regulations

Kern County Grading Ordinance (17.28)

Chapter 17.28 Kern County Grading Code. Requirements of the Kern County Grading Code will be implemented. A grading permit will be obtained prior to commencement of construction activities. Of particular note with respect to hydrology and water quality is Section 17.28.140, Erosion Control, which addresses the following:

Slopes. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

Other Devices. Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

Temporary Devices. Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Kern County Floodplain Management Ordinance (17.48)

Any construction that takes place within areas of special flood hazards, areas of flood-related erosion hazards, and areas of mudslide (i.e., mudflow) hazards within the jurisdiction of unincorporated Kern County will comply with the requirements and construction design specifications of this ordinance. Any required development permits will be obtained prior to commencement of construction activities. Sections 17.48.250 through 17.48.350 of the ordinance elaborate on the standards of construction in the special flood hazards area.

Kern County Development Standards

The Kern County Development Standards apply to all developments within Kern County that are outside of incorporated cities. These standards establish minimum design and construction requirements that will result in improvements that are economical to maintain and will adequately serve the general public. The requirements set forth in these standards are considered minimum design standards and will require the approval of the entity that will maintain the facilities to be constructed prior to approval by the County.

Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the project proponent to provide background information on construction activities. Project proponents must apply for the permit under one of the following four conditions:

1. All storm water is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
2. All storm water runoff is not retained on site, but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.
3. All storm water runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.
4. Construction activity is between 1 to 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

Kern County – Applicability of NPDES Program for a Project Disturbing 1 Acre or Greater

As closed systems that never contact the ocean or other waters of the U.S., many of the waters within Kern County are technically not subject to protective regulations under the federal NPDES Program. The Kern County Public Works Department requires the completion of an NPDES applicability form for projects with construction activities disturbing 1 or more acres, and requires the project proponent to provide information about construction activities and to identify whether storm water runoff has the potential of discharging into waters of the United States, waters of the state, or a terminal drainage facility. The purpose of the form is to identify which water quality protection measure requirements apply to different project (if any). Should storm water runoff be contained on site and not discharge into any waters, no special actions

are required. Should storm water runoff discharge into waters of the United States, compliance with the SWRCB Construction General Permit SWPPP requirements is required. Should storm water runoff not be contained on site and drains to waters of the state or a terminal drainage facility, the project proponent would be required to develop a SWPPP and BMPs.

Kern County Zoning Ordinance

Chapter 19.70 Floodplain Combining District

Section 19.70.040 prohibits uses including the following uses in the Floodplain Combining District, as applicable to the proposed project:

Implementation Measures

- Measure B: All uses that will likely increase the flood hazard or affect the water-carrying capacity of the floodplain beyond the limits resulting from encroachment as specified in Section 19.70.130.
- Measure C: Dumping, stockpiling, or storage of floatable substances or other materials which, in the opinion of the Kern County and Survey Services Department, will add to the debris loads of the stream or watercourse, unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with Section 19.70.130.
- Measure D: Storage of junk or salvage operations.
- Measure E: Oil storage tanks or processing equipment, unless flood-proofed or sufficiently elevated above the Base Flood Elevation, as determined by the Kern County Public Works Department.
- Measure F: Individual sewage disposal systems (e.g., septic tank systems), unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters into the systems and discharges from the systems into the floodwaters.
- Measure G: Sources of water supply (e.g., wells, springs) unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters.

4.10.4 Impacts and Mitigation Measures

Methodology

This section analyzes impacts on hydrology and water quality from the implementation of the project based on changes to the environmental setting as described above, identified drainage conditions in the project site, and the current regulatory framework. The project's potential impacts to hydrology and water quality have been evaluated using the *Hydrology and Water Quality Study* (S2S, 2021) prepared for the project,

located in Appendix J of this EIR. Additionally, a variety of resources, including multiple online sources, published documents, The Kern County General Plan, and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on hydrology and water quality.

A project could have a have a significant impact on hydrology and water quality if it would:

- a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
- b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would
 - i. Result in substantial erosion or siltation onsite or offsite;
 - ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
 - iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
 - iv. Impede or redirect flood flows;
- d. Result in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation;
- e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Project Impacts

Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality.

Water quality standards and waste discharge requirements could be violated if the project site releases polluted discharges into receiving waters without a permit. Polluted discharges can generate polluted stormwater runoff (i.e., water generated during storm events) or dry weather runoff (i.e., water generated during activities such as dust control). Polluted discharge can consist of sediment from erosion, pollutants from herbicides or pesticides applied to agricultural lands or vegetation, or pollutants from construction equipment, such as oil drippings or accidental spills of petroleum hydrocarbons.

Construction and Decommission

Potential impacts on water quality arising from erosion and sedimentation would be localized and temporary during construction. Minimal grading and excavation would be required to enable construction of project-related foundations and to create areas where the footings for the panels could be installed. The proposed Gen-Tie line also may require minimal grading or excavation to enable placement of utility infrastructure. While grading and excavation could modify the drainage on the project site careful design of graded surfaces, utility corridors, and for access road gradients and other project features, would minimize alterations to the existing drainage patterns and minimize the potential for erosion. The project proponent would implement measures to minimize and contain erosion and sedimentation in accordance with the Kern County Grading Ordinance and would be required to submit a grading plan to the County for approval prior to commencement of any construction activities. In addition, the project would conform to and implement the NPDES requirements and SWPPP needed BMPs.

Because the project would disturb more than 1-acre, the project proponent would be required to obtain and comply with the NPDES Construction General Permit. As required by this permit, the project proponent would have to develop a SWPPP and comply with any regional requirements to meet State water quality objectives. Pending revisions, the NPDES permitting process may require development of a rain event action plan prior to permit approval. Construction-related erosion and sedimentation impacts as a result of soil disturbance would be less than significant after implementation of an SWPPP (see Mitigation Measure MM-1). The SWPPP would detail BMPs (such as the use of silt fencing, erosion control blankets or fiber mats, dust control with water or other palliatives, revegetation with native species, etc.) and/or other measures required by the Kern County Grading Ordinance.

Other impacts that could result during project construction include activities that could result in the accidental release of hazardous or potentially hazardous materials could result in water quality degradation. Further, any construction activity that results in the accidental release of pollutants, hazardous or potentially hazardous materials could result in water quality degradation. Materials that could contribute to this impact include, but are not limited to, diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids utilized by construction and maintenance vehicles and equipment. Motorized equipment could leak hazardous materials such as motor oil, transmission fluid, or antifreeze due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error.

The potential impacts of a spill or release of these types of materials are generally small due to the localized, short-term nature of the releases and the limited number and length of time heavy construction equipment would be needed. The volume of any spills would likely be relatively small because the volume in any single vehicle or container would generally be less than 50 gallons. Fuel trucks would be used to bring gasoline and diesel to the project site and fuels would be temporarily stored in above ground tanks with secondary containment. All fuel storage and fueling activities would occur in accordance with the hazardous materials business plan (HMBP).

As noted in Section 4.9, *Hazards and Hazardous Materials*, of this EIR, Mitigation Measure MM 4.9-1 would require the project proponent to provide a Hazardous Materials Business Plan that would delineate hazardous material and hazardous waste storage areas; describe proper handling, storage, transport, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other

emergencies, including fires. Additional guidance to the safe handling and use of these materials is guided by the NPDES Construction General Permit and SWPPP, which, would include measures regarding the handling of these types of materials and protocols for actions taken if a spill or release does occur. Therefore, with implementation of Mitigation Measures MM 4.10-1 and MM 4.9-1, impacts to water quality would be less than significant during construction.

Operation

The proposed project includes operation of a solar generating facility. The majority of the site would be occupied by solar panels mounted on fixed steel support posts. This mounting system minimizes the need for cement foundations and footings and would not substantially alter the drainage patterns of the site. Runoff from rainwater would drain off the sides of the panels and fall to the ground surface. Due to the largely flat contours and use of on-site stormwater retention basins most water would infiltrate the ground surface. While some rainfall from the margins of the site could flow off-site via sheet flow, effects would be minimal and the potential for substantial erosion that could occur under concentrated runoff condition is considered low. Nonetheless, where potential for channel erosions exists, BMPs would be implemented to prevent surface flows from becoming concentrated.

To further minimize the potential for degradation of water quality, the project sites engineering and design plans would comply with the most recent requirements of the Kern County Code of Building Regulations. This includes provisions to minimize runoff and erosion leading to potential degradation of downstream receiving waters or other off-site areas. Prior to the commencement of construction activities, the applicant would be required to prepare and submit drainage plans to the Kern County Engineering and Survey Services Department. This would include postconstruction structural and nonstructural BMPs. Structural BMPs would include filtration, protection of any exiting inlets, runoff-minimizing landscape for common areas, energy dissipaters, managing trash and waste and inlet trash racks, and water quality inlets. Non-structural BMPs would include but not be limited to leaving open areas adjacent to panels to maximize infiltration, using flat grades as feasible to minimize the volume and rate of runoff, and routine inspections of structural BMPs to ensure they are functional and compliant with regulations.

Conformance to these measures and implementation of Mitigation Measure Mitigation Measures MM 4.9-1 requiring a HMBP and MM 4.10-1 and 4.10-2, would minimize long-term impacts on drainage patterns across the project site that could result in substantial erosion and siltation on or off site. would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the protection of water quality.

Mitigation Measure

Implement Mitigation Measure MM 4.9-1 would be required (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

MM 4.10-1: Prior to issuance of a grading permit, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan (SWPPP) for review and approval by the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department. The SWPPP shall be designed to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving offsite and into receiving waters. The requirements of the SWPPP shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the SWPPP may include the following:

- a. Minimization of vegetation removal;
- b. Implementing sediment controls, including silt fences a necessary;
- c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas;
- d. Properly containing and disposing of hazardous materials used for construction onsite;
- e. Properly covering stockpiled soils to prevent wind erosion;
- f. Proper protections and containment for fueling and maintenance of equipment and vehicles; and
- g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter.
- h. Cleanup of silt and mud on adjacent street due to construction activity.
- i. Checking all lined and unlined ditches after each rainfall and protecting existing storm drain or water inlets;
- j. Restore all erosion control devices to working order to the satisfaction of the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department after each rainfall run-off.
- k. Install additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise.

MM 4.10-2: Prior to the issuance of a grading permit, the project proponent/operator shall complete a hydrologic study and final drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study shall include, but is not limited to the following:

- a. A numerical stormwater model for the project site that evaluates existing and proposed (with project) drainage conditions during storm events ranging up to the 100-year event.
- b. The study shall also consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation.
- c. Engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as

implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite.

- d. A specification that the final design of the solar arrays shall include one foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be graded to direct potential flood waters without increasing the water surface elevations more than one foot or as required by Kern County's Floodplain Management Ordinance.
- e. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards and approved by the Kern County Public Works Department prior to the issuance of grading permits.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.9-1, MM 4.10-1, and MM 4.10-2 impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.10-2: The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

The proposed project would use water during construction, decommission, and for operation of the project. Water demand would be met using local water resources and would be obtained from contracts with the local water district or surface water supplies prior to start of construction. Water for both construction and operation would be imported by trucks and stored on site in aboveground storage tanks, as needed.

The use of water for temporary construction purposes would not substantially deplete the supplies of the local water district or private source or the associated groundwater basin

While the project would result the conversion of portions of the site to solar energy production, the project would not substantially reduce groundwater volumes or impede recharge and sustainable groundwater management within the basin either during construction or during operation. Water would be obtained from an in-site or off-site groundwater well in the Kern subbasin, and/or it would be purchased from a WDMA member water district, such as the LHWD, and trucked to and stored on the project site, and used as needed. As such water supplied by a WDMA member consist of both imported SWP water and groundwater resources.

Depth to groundwater within the vicinity of the project site is likely greater than 50 feet below ground surface (bgs). It is reasonable to assume some groundwater infiltration at the project site during precipitation events because the project site is currently pervious and consists of open ground. However, the project site is not specifically designated as and does not specifically operate as a groundwater recharge location.

Construction

Construction activities are anticipated to require approximately 75-acre feet during the construction year, or approximately 6.25-acre feet per month, for water primarily for dust control, spraying piled soils, and soil compaction during grading. Water also would be used for reseeding with native vegetation, construction activities such as mixing concrete and vehicle washing to reduce dust and also minimize spread of invasive weeds.

Construction would not prevent or inhibit any incidental groundwater recharge that currently occurs on site from precipitation. During construction the project site would generally remain pervious and would allow any current infiltration that occurs to continue. During installation of the impervious solar panels, the same as after construction, most rainfall would disperse across their panel surface and fall to the ground surface. This would facilitate infiltration and subsequent groundwater recharge.

Operation

New impervious surfaces would be introduced but would be limited to the BESS and other minor support facilities and the new solar equipment. As discussed above, most water falling on the new panels would runoff and fall to the ground surface and infiltrate. The interior access roads would be unpaved or use an all-weather aggregate base. Thus, most of the project site would remain permeable and would not be an impediment to groundwater recharge.

Water use during operations would primarily be used for washing the panels two to three times a year and for fire suppression. Panels would be washed to minimize dust or other materials and maintain efficiency. Similar to rainfall, water from panel washing would runoff the panels land on the ground and have the opportunity to infiltrate. Water for fire suppression, should it be needed, would be stored on site. Approximately 0.25 AFY and 1.48 AFY would be needed for panel washing and fire suppression, respectively.

Based on these demands the proposed project would require approximately 5.65 AFY of water when the water use is amortized over the anticipated 30-year life of the project. Considering the existing land uses are conservatively estimated to require 114.7 AFY of water, the project would use approximately 109 less AFY per year of water. Therefore, construction of the project site would not result in a substantial depletion of the groundwater supplies or interfere substantially with groundwater recharge, and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction, decommission, and operation, including those regulations that relate to the protection of groundwater recharge.

Mitigation Measures

Implementation of Mitigation Measure MM 4.10-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.10-3: The project would substantially alter the existing drainage patterns 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 than would result in substantial erosion and/or sedimentation on-site or off-site.

Construction and Decommission

Construction and decommission of the project would result in minor alterations of the existing drainage pattern of the site but there are no on-site rivers or drainages in the location of the proposed solar field. If runoff during grading is not properly controlled, it could result in erosion or siltation on or off site because of the removal of vegetation and resulting bare soil being subject to water and wind driven erosion. As discussed in Impact 4.10-1, above, potential impacts on water quality arising from erosion and sedimentation are expected to be localized and temporary during construction. Construction-related erosion and sedimentation impacts resulting from soil disturbance would be less than significant after implementation of a SWPPP (see Mitigation Measure MM 4.10-1) and BMPs required by the Kern County Grading Ordinance. Construction and decommission of the project would not permanently alter the course of any of the drainages. Thus, the changes to the drainage patterns across the project site would be minimal and no physical changes to any stream or river are proposed. Impacts would be less than significant and additional mitigation is not required.

Operation

Operational impacts could occur once permanent structures are placed on-site but no stream or river would be affected because none exist on the project site. The proposed project would introduce new impervious surfaces primarily from the new solar panels. As discussed above, the runoff from the panels would fall to the ground. The ground beneath the solar panels, however, would remain pervious, similar to the existing site, and this area would continue to absorb the majority of runoff from the panels. This would promote infiltration and minimize surface flows. The project also would include retention basins that would be designed and included to the project to help control anticipated runoff. Accordingly, Mitigation Measure MM 4.10-2 requires the completion of a hydrologic study and final drainage plan for the proposed project prior to the issuance of a grading permit; the plan would demonstrate that the project site has been designed to minimize potential increases in runoff.

Lastly, and as discussed, above, the project's site engineering and design plans would be required to comply with the most recent requirements of the Kern County Code of Building Regulations. Therefore, with implementation of MM 4.10-1, MM 4.10-2, and BMP's, required by the Kern County Grading Ordinance, long-term impacts on drainage patterns across the project site would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The modifications to the Arco Substation and construction of Interconnection Facilities, including improvement to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the protection of existing drainage patterns.

Mitigation Measures

Implementation Mitigation Measures MM 4.10-1 and MM 4.10-2 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.10-4: The project would substantially alter the existing drainage patterns 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 that would result in flooding onsite or offsite.

The rate and amount of surface runoff is determined by multiple factors, including the following: topography, the amount and intensity of precipitation, the amount of evaporation that occurs in the watershed, and the amount of precipitation and water that infiltrates to the groundwater. The project would not alter the amount or intensity of precipitation, nor would it require significant amounts of additional water to be imported to the project site.

Construction and Decommission

Although grading would occur on the project site, the project site is relatively flat and level and ground disturbance would not substantially alter the overall topography or flow regime of the project site. Runoff patterns and concentrations could be altered by grading activities and improper design of the access road and solar panel sites that would cause flooding on or off site. Some areas with dense vegetation would be removed but low-lying shrubs would be maintained in their existing condition to the greatest extent feasible. This would help facilitate groundwater infiltration minimize surface flow and reduce runoff. Water would be applied to the ground surface during the temporary construction phase, primarily for dust suppression and to reduce erosion from wind and vehicle disturbances. The water would be mechanically and precisely applied and would generally infiltrate or evaporate which would minimize the potential for uncontrolled run off from this source.

Grading also would not substantially alter the existing contours of the site and there are no existing streams, rivers, or drainages that would be modified by construction activities. Additionally, no project elements are planned to be placed within the flood zone. Thus, the rate or amount of surface runoff resulting from project construction activities would be similar to the existing condition and the potential for on-site or off-site

flooding as a result of project construction is minimal. The potential effects would be further reduced through compliance with design specifications and BMPs required by the Kern County Grading Ordinance and the preparation of a SWPPP, included under MM 4.10-1.

Operation

Operation of the project would slightly alter the existing drainage pattern on site. The project would install the solar panels on piers which would minimize the need for cement foundations and footings. By raising the solar panels off the ground, the project would not substantially alter drainage patterns of the site in a manner that would increase flooding potential. Additionally, as stated above, no project elements are planned to be placed within the flood zone. Once the facilities are fully operational, minimal amounts of water (approximately 0.25 afy) would be required for panel washing or maintenance. This minimal volume would not make a substantial contribution to the potential for flooding.

In addition to the water needed for panel washing, approximately 2.95 af of water would be stored on-site as it was conservatively estimated that 1.48 AFY may be needed for fire suppression. If water is needed for fire suppression, which is considered unlikely due to the general lack of vegetation and surrounding agricultural uses the water would be applied in a localized permeable area at a rate and volume that would not result in on-site or off-site flooding.

Thus, through conformance with all requirements contained within the Kern County Grading Ordinance and implementation of Measures MM 4.10-1 and MM 4.10-2, long-term effects on drainage patterns and the potential to result in flooding on or off site, would be less than significant

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. Mitigation Measures

Implementation Mitigation Measures MM 4.10-1 and MM 4.10-2 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.10-5: The project would create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Construction and Decommission

The project site is located in a remote, rural region with no existing or planned stormwater infrastructure. There are no existing stormwater drainage systems on the project site, and no stormwater drainage systems are proposed as part of the project. The project site is drained by sheet flow and any existing rainfall and

irrigation runoff, as well as that which would be applied during construction would percolate into the ground with minimal potential for runoff. If water from rainfall events during construction is not properly controlled, however, it could result in runoff containing silt or soil from bare ground surfaces. Runoff also could contain potentially hazardous materials—such as engine oil, diesel fuel, or lubricant—if an accidental release of these materials were to occur during the construction phase.

To further reduce the potential for effects from erosion or other materials, the proposed project would be required to adhere to drainage plans approved by the Kern County Engineering, Surveying and Permit Services Department. The proposed project also would comply with all NPDES permit requirements detailed in the SWPPP and associated BMPs required by the Kern County Grading Code and Floodplain Management Ordinance. In addition, the project would implement a HMBP that would be in place prior to initiation of construction activities. The HMBP would ensure all fuels, greases, solvents, or other similar materials are appropriately stored and a clean-up protocol is in place should a spill occur. Conformance with these requirements would minimize stormwater runoff from the project site during construction. Thus, with the implementation of the SWPPP (MM 4.10-1) and BMPs required by the Kern County Grading Code, impacts associated with polluted runoff during construction would be less than significant.

Operation

Development of the project site would create additional impervious surfaces. These changes would not substantially increase the amount of stormwater runoff. The project site is drained by sheet flow and does not rely on constructed stormwater drainage systems. As discussed above, the pattern and concentration of runoff could be altered by project activities such as grading and installation of the solar panels. Impacts related to polluted runoff from operation of the project would be mitigated to less-than-significant levels with implementation of Mitigation Measure MM 4.10-2, which requires development of BMPs in compliance with the Kern County Grading Code to limit onsite and offsite erosion and flooding and to suppress dust.

Regarding the potential for hazardous materials to contribute to polluted runoff, as discussed in the *Phase I Environmental Site Assessment* (Appendix I), no hazardous materials records related to the project site were found. As discussed in Impacts a through c (iii), the proposed project would not substantially degrade water quality during the construction or operational period because once the project is completed, additional ground disturbance would not be occurring and hazardous material use would be minimal, and the stormwater drainage system, with retention basins, would be in place to capture and control runoff. Thus, impacts related to project operations and the potential for polluted runoff to affect off-site areas is less than significant and additional mitigation is not required.

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The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the protection of existing drainage patterns as they relate to flooding.

Mitigation Measures

Implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

Approximately 40 acres of the southern project area are within a Flood Zone “A” which correspond to 100-year floodplains or areas with one percent chance exceedance probability. The location of all solar-related structures and any other facilities that could be affected by or impede or redirect flood flows are outside the southern portion of the site that is a FEMA-designated 100-yr floodplain. No project activities would occur in areas with special flood hazards. In addition, incorporation of MM 4.10-1 and MM 4.10-2, which require preparation of a SWPPP and implementation of BMPs to limit erosion, would ensure that construction, decommission, and operation of the proposed project would not result in a significant impact relative to impeding or redirecting flood flows within an area identified with a flood hazard. Impacts in this regard would be less than significant and mitigation is not required.

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The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. PG&E’s best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the protection of existing drainage patterns as they relate to the 100-year flood hazard area or impeding flows within a flood hazard area.

Mitigation Measures

Implement Mitigation Measures MM 4.10-1 and MM 4.10-2 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.10-7: The project would result in a flood hazard, tsunami, or seiche zone, and risk release of pollutants due to project inundation.

A tsunami is a series of ocean waves generated by sudden displacements in the sea floor, landslides, or volcanic activity. A seiche is a standing wave in an oscillating body of water. The project site is located approximately 60 miles west of the Pacific Ocean and there are no enclosed bodies of water within the project vicinity; therefore, the risk for tsunami or seiche in the project area is very low and there would be little or no chance for an impact involving release of pollutants during such events.

As discussed above, southerly portion of the project site is located within a 100-year flood zone but no project activities would occur within this area. Further, as discussed in Section 4.9, Hazards and Hazardous Materials, the proposed project would not include the use, storage, or disposal of significant quantities of hazardous materials that could introduce pollutants to the environment should the area be inundated. Therefore, considering the limited area of the site that is in the flood hazard area, the limited amount of storage of hazardous materials at the site, and with the implementation of the drainage plan required by Mitigation Measure MM 4.10-2, which would provide flood protection measures, the potential for release of pollutants due to project inundation impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality.

Mitigation Measures

Implement Mitigation Measure MM 4.10-2 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-2, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The project site is located within the Central Valley RWQCB jurisdiction and is subject to the applicable requirements of the Basin Plan administered by the RWQCB in accordance with the Porter-Cologne Water Quality Control Act. The Kern County Public Works Department requires the completion of an NPDES applicability form for projects with construction activities disturbing one or more acres and requires the project proponent to provide information about construction activities and to identify whether stormwater runoff has the potential of discharging into water of the United States, waters of the state, or a terminal drainage facility. As discussed above, the project would include required BMPs and drainage control requirements that would be consistent with the Basin Plan.

Regarding groundwater management, the project site is located in an area called the “South Dome” subbasin which is adjacent to the Kern County Subbasin, on the south, both of which are within the larger Tulare Lake Hydrologic Region of the San Joaquin Valley Groundwater Basin. Accordingly, the Kern Groundwater Authority (KGA) serves as the Groundwater Sustainability Agency (GSA). The KGA was formed by a Joint Powers Agreement between 16 member agencies to function as the GSA for the overall Kern Subbasin.

As the GSA for the overall Kern Subbasin, the KGA developed an “umbrella” Groundwater Sustainability Plan (GSP) for the Kern Subbasin, referred to as the “KGA Umbrella GSP”. The KGA Umbrella GSP provides Sustainable Groundwater Management Act (SGMA) coverage for all Kern Subbasin lands that are included in the management areas of member agencies to the KGA. Each KGA member agency of Chapter has developed a Management Area Plan for its respective management area, all of which are attached to the KGA Umbrella GSP.

In accordance with the same requirement, the WDWA also has a Management Plan, which, in conjunction with the KGA GSA and other GSAs in the Kern Subbasin, is intended to meet the regulatory requirements of SGMA by providing management of all subbasins.

As part of the WDWA Management plan, PMAs were identified and are shown in **Table 4.10-2**. The PMAs include plans and strategies to help ensure adequate water resources will be available for customers. Although additional shortfalls, changes, and constraints are anticipated, WDWA assumes that management actions would be taken by the WDWA and its growers to reduce demand or increase supply from alternate sources. Accordingly, with implementation of the PMAs the WDWA can achieve its sustainability goal by 2040 despite the effects of climate change and decreasing SWP water deliveries. In addition, the WDWA is an active participant in the various surface water transfers, exchanges, and purchase markets in the Central Valley, and will continue working toward securing additional supply through those sources.

Thus, based upon the anticipated benefits of conjunctive use management and successful implementation of PMAs 1 through 3, the WDWA Management Area of the Kern Subbasin can achieve a state of sustainable supply conditions by 2040.

In addition, it is noted that while the proposed project would convert the existing land uses on the project site from agricultural to solar energy development, solar uses are generally less water intensive. The water demands to irrigate wheat can typically use a minimum of 8.6 inches of water per acre in a drought year for grazing. Using this assumption, a conservative estimate is the application of 8.6-inches applied every two years to 320 acres of the site. This equates to an existing and future water demand approximately 114.7 AFY. Although this is a conservative estimate, in comparison to the proposed project’s operational demands which were conservatively estimated at 5.65 AFY per year when amortized over the 30-year operation timeline and the water needs for decommissioning. This results in a potential reduction of approximately 109 AFY used by converting from agriculture to solar energy development. Therefore, implementation of the proposed project could accelerate achievement of sustainable conditions in the basin, further improving water supply reliability.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. PG&E’s best management practices and APMs include compliance with all

applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the protection of existing drainage patterns as they relate to water quality control plans and sustainable groundwater management plans.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, of this EIR, there are multiple projects proposed throughout Kern County and the Southern San Joaquin Valley, including solar facilities, agricultural trucking facilities, telecommunications infrastructure, and commercial development. Similar to the proposed project many projects are anticipated to not be located within or adjacent to waters of the US or wetland areas and would not result in discharges. In addition, all cumulative projects would be subject to and includes similar mitigation to include Mitigation Measure MM 4.10-1, which requires the project to prepare and implement a SWPPP in accordance with County requirements. Similarly, all projects that would not retain all runoff onsite would be required to prepare a SWPPP, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Furthermore, the proposed project and other project, as applicable, would implement a Hazardous Materials Business Plan as part of Mitigation Measure MM 4.9-1 that would require appropriate handling of hazardous materials onsite to ensure they do not come into contact with stormwater and affect water quality. All other projects in the vicinity that would handle hazardous materials would be required to comply with any other applicable hazardous material regulations. Therefore, cumulative scenario impacts associated with water quality degradation would not be cumulatively considerable, and the project would not contribute to a cumulative impact on water quality.

With regard to water supply, the proposed project would obtain its water supply from the WDWA which maintains a Management Plan that includes PMAs and other measures that help ensure an adequate volume of water is available and would remain available. The project would likely receive water from one of four agencies that would fall under management of the WDWA. While the Basin is in a state of overdraft. The Water Supply Assessment determined that there are sufficient supplies for both proposed project construction and operation. This conclusion also considers that the proposed project would reduce existing and future use on the site by approximately 109 AFY and reduce the overall cumulative water demand in the basin. Therefore, the project's water use, in combination with other cumulative scenario projects requiring groundwater would be less than significant.

With respect to erosion, drainage, and flooding, the project would implement Mitigation Measure MM 4.10-2, which would minimize direct impacts on erosion, drainage, and flooding. It is anticipated that other cumulative scenario projects would be required to implement similar measures, in order to minimize erosion, drainage, and flooding related impacts. Additionally, drainage related impacts from cumulative scenario projects would be primarily localized. Therefore, cumulative scenario impacts on erosion,

drainage, and flooding are not anticipated to be cumulatively considerable, and the project would not contribute to a cumulative impact on flooding, erosion, or drainage.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation, for the transport of renewable energy is not anticipated to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the protection of existing drainage patterns as they relate to flooding.

Mitigation Measures

Implement of Mitigation Measures MM 4.9-1, MM 4.10-1 and MM 4.10-2 would be required (see 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text)

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.10-1, and MM 4.10-2 impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Section 4.11

Land Use and Planning

4.11.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project for impacts that may affect land use and planning. It also describes the environmental and regulatory setting and discusses the need for mitigation measures where applicable. The information in this section is based primarily, but not exclusively, on a review of the project's consistency with the Kern County General Plan and the Kern County Zoning Ordinance.

4.11.2 Environmental Setting

Onsite Land Uses

The proposed solar panels and associated facilities would occupy approximately 340 acres of the 640 acre project site. The project site is currently privately-owned agricultural land located in the north western extent of Kern County, California. The project site is located within the boundaries of Agricultural Preserve No. 1 and one of the parcels, assessor parcels (APN# 043-210-17) is 480 acres and is currently subject to a Williamson Act Land Use Contract. Neither this parcel nor the other project parcel, APN# 043-210-018 – 160 acres are designated as farmland. The project is in the Central California Valley Ecoregion and the United States Geological Survey (USGS) Avenal Gap 7.5-minute topographical quadrangle. Development in the area surrounding the project site is predominantly agriculture. The project site is within the San Joaquin Valley Basin of the San Joaquin Valley Air Pollution Control District.

The project site ranges in elevations from roughly 462-feet above mean sea level (amsl) at the southwest corner of the project site, to roughly to 584-feet above mean sea level at the northeast corner of the project site generally slopes gently from the northeast towards the southwest. The project site is vacant and undeveloped and covered with sparse to moderately dense non-native vegetation currently used for grazing. The site is in a cycle of approximately every two years to facilitate planting cover crops for cattle grazing. Habitats within the project site includes agricultural field(s), non-native annual grassland habitat, and patches of ruderal habitat along the fenced boundaries of the project site. The project site and surrounding lands are mostly flat and exhibit little topographic variation. There are no drainage features located on the site.

As shown in **Table 4.11-1: Project Site and Surrounding Land Use Designations and Zoning Classifications**, below, the project site is located within unincorporated Kern County and within the administrative boundaries of the Kern County General Plan. Within the Kern County General Plan, the project site's land use designation is Map Code(s) 8.3 (Extensive Agriculture), 8.3/2.5 (Extensive Agriculture/Flood Hazard Overlay). As shown in **Table 4.11-1: Project Site and Surrounding Land Use Designations and Zoning Classifications**, below, the project site's zoning classification is A (Exclusive Agriculture).

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USE DESIGNATION AND ZONING CLASSIFICATIONS

Location	Existing Land Use	Existing Map Code Designation	Existing Zoning Classification
Project Site	Agricultural	8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture Flood Hazard Overlay)	A (Exclusive Agriculture)
North	Agricultural, Vacant Land	8.3 (Extensive Agriculture)	A (Exclusive Agriculture)
South	Agricultural, Vacant Land	8.1/2.5 (Intensive Agriculture/Flood Hazard Overlay); 8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay)	A (Exclusive Agriculture)
East	Agricultural, Vacant Land	8.1 (Intensive agriculture (min. 20 acre parcel size))	A (Exclusive Agriculture)
West	Agricultural, Vacant Land	8.3 (Extensive Agriculture); 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay)	A (Exclusive Agriculture)

Legend

- 8.1 = Intensive Agriculture
- 8.3 = Extensive Agriculture
- 2.5 = Flood Hazard

- A (Exclusive Agriculture)

SOURCE: Kern County, 2019

Surrounding Land Uses

The project site is located south of the Kern County/Kings County Line, in an unincorporated area of north-western Kern County, CA. As described in **Table 4.11-1: Project Site and Surrounding Land Use Designations and Zoning Classifications**, above, surrounding land uses are composed primarily of agriculture. Existing development in the project vicinity includes rural access roads, scattered rural residences, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, a canal, the Wonderful pistachio and almond nut processing plant, and meteorological towers.

Surrounding land uses are classified 8.1 (Intensive agriculture (min. 20 acre parcel size)), 8.1/2.5 (Intensive Agriculture/Flood Hazard Overlay), 8.3 (Extensive Agriculture), and 8.3/ 2.5 (Extensive Agriculture/Flood Hazard Overlay). Surrounding land uses are located within the zoning designation of A (Exclusive Agriculture) Zone District.

4.11.3 Regulatory Setting

Federal and State

There are no applicable federal or state regulations for this issue area.

Local

Land use and planning decisions within and adjacent to the project site are guided and regulated by the Kern County General Plan and Kern County Zoning Ordinance. The Kern County General Plan contains goals, objectives, and policies and provides an overall foundation for establishing land use patterns. For this land use impact analysis, this section lists all relevant goals, objectives, policies, and implementation measures related to the proposed project. The Zoning Ordinance contains regulations through which the General Plan's provisions are implemented. The most relevant regulations pertaining to solar energy development are presented below.

Kern County General Plan

The Kern County General Plan is a policy document designed to provide long-range guidance for planning decisions that affect the growth and resources of unincorporated Kern County. Included in the Kern County General Plan is the Land Use, Open Space, and Conservation Element, which provides for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes (County of Kern, 2009). Within the Land Use, Open Space and Conservation Element, policy areas are separated by overlay designations, known as "Map Codes", which are identified on the Kern County General Plan maps for each section of the County and include the following categories: (1) non-jurisdictional land (State and federal); (2) environmental constraints overlay; (3) public facilities; (4) non-jurisdictional land (accepted county plan areas, rural communities and specific plan required); (5) residential; (6) commercial; (7) industrial; and (8) resource. Each Map Code/overlay area contains specific goals, policies, and implementation measures to guide development within them. The Kern County General Plan includes the following land use designations: Map Code(s) 8.3 (Extensive Agriculture, Minimum 20- or 80- acre parcel size), 8.3/2.5 (Extensive Agriculture, Minimum 20- or 80- acre parcel size / Flood Hazard). Each Map Code/overlay area contains specific goals, policies, and implementation measures to guide development within them.

In addition to the Land Use, Open Space, and Conservation Element, the Kern County General Plan includes other elements related to circulation, noise, and energy. Each element establishes goals, policies, and implementation measures that guide planning decisions in unincorporated Kern County. The goals, policies, and implementation measures relevant to the proposed project are listed below.

1. Land Use, Open Space, and Conservation Element

1.3 Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

Policies

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained ((Map Code 2.1 (Seismic Hazard), Map Code 2.2

(Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

- Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.
- Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.
- Policy 11: Protect and maintain watershed integrity within Kern County.

Implementation Measures

- Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.
- Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.
- Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.
- Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.
- Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.4 Public Facilities and Services

Goals

- Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.
- Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

Policies

- Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.
- Policy 6: The County will ensure adequate fire protection to all Kern County residents.
- Policy 7: The County will ensure adequate police protection to all Kern County residents.

Implementation Measures

- Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.
- Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.
- Measure D: Involve utility providers in the land use and zoning review process.
- Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.9 Resource***Goals***

- Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.
- Goal 3: To ensure that the development of resource areas minimizes effects of neighboring resource lands.
- Goal 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.
- Goal 5: Conserve prime agricultural lands from premature conversion.
- Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policies

- Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.
- Policy 5: Areas of low intensity agriculture use (Map Code 8.2 (Resource Reserve), Map Code 8.3 (Extensive Agriculture), Map Code 8.5 (Resource Management)) should be of an economically viable size in order to participate in the State Williamson Act Program/Farmland Security Zone Contract.
- Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.
- Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.
- Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.
- Policy 16: The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission.

Implementation Measures

- Measure B: Areas designated as Resource Reserve (Map Code 8.2), Extensive Agriculture (Map Code 8.3), Resource Management (Map Code 8.5) that are under Williamson Act Contracts or Farmland Security Zone Contracts will have a minimum parcel size of 80 acres until such time as a contract is expired or is cancelled, at which time the minimum parcel size will become 20 acres.

1.10 General Provisions***Goal***

- Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1 Public Services and Facilities***Policies***

- Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Implementation Measures

- Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

1.10.2 Air Quality

Policies

- Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.
- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:
- (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
- Policy 21: The County shall support air districts efforts to reduce PM10 and PM2.5 emissions.

Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.

Implementation Measures

Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.

Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:

- a. Minimizing idling time.
- b. Electrical overnight plug-ins.

Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:

- a. Pave dirt roads within the development.
- b. Pave outside storage areas.
- c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
- d. Use of alternative fuel fleet vehicles or hybrid vehicles.
- e. Use of emission control devices on diesel equipment.
- f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
- g. Provide bicycle lockers and shower facilities on site.
- h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
- i. The use and development of park and ride facilities in outlying areas.
- j. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM10 control measures as conditions of approval for subdivision maps, site plans, and grading permits.

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

- Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.
- Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.
- Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.
- Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

1.10.5 Threatened and Endangered Species

Policies

- Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.
- Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.
- Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.
- Policy 31: Under the provisions of the California Environmental Quality Act, the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document is prepared.
- Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

- Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.
- Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

1.10.6 Surface Water and Groundwater

Policies

- Policy 34: Ensure that water quality standards are met for existing users and future development.
- Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.

- Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.
- Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Implementation Measure

- Measure Y: Promote efficient water use by utilizing measures such as:
- (i) Requiring water-conserving design and equipment in new construction;
 - (ii) Encouraging water-conserving landscaping and irrigation methods; and
 - (iii) Encouraging the retrofitting of existing development with water conserving devices.

1.10.7. Light and Glare

Policies

- Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
- Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Implementation Measure

- Measure AA: The County shall utilize *CEQA Guidelines* and the provisions of the Zoning Ordinance to minimize the impacts of light and glare on adjacent properties and in rural undeveloped areas.

Chapter 2. Circulation Element

2.1 Introduction

Goals

- Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.
- Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County unless the roads are part of an adopted Community Plan or Specific Plan which utilizes Smart Growth policies that encourage efficient multi-modal movements (See Section 1.10.8 of the Kern County General Plan).

2.3.3 Highway Plan

Goals

- Goal 5: Maintain a minimum Level of Service (LOS) D.

Policies

- Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.
- Policy 3: This plan's road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.
- Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;
 - Arterial [Major Highway] Minimum 110-foot right-of-way;
 - Collector [Secondary Highway] Minimum 90-foot right-of-way;
 - Commercial-Industrial Street Minimum 60-foot right-of-way; and
 - Local Street [Select Local Road] Minimum 60-foot right-of-way.

Implementation Measure

- Measure A: The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4 Future Growth***Goal***

- Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

- Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level Of Service (LOS) D. However, development proposed as part of a Community Plan or Specific Plan which utilizes Smart Growth Policies that encourage efficient multi-modal movements (See Section 1.10.8) is allowed the flexibility to assess traffic and safety impacts through other means than Level Of Service (LOS). Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build off-site transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

- Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.
- Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.
- Policy 6: The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

Implementation Measure

- Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

2.3.10 Congestion Management Programs

State law requires that urbanized counties (including Kern County) prepare an annual congestion management program (CMP). City and county eligibility for new gas tax subventions is contingent upon their participation in the congestion management program. To qualify for funding provided through the State Transportation Improvement Program (STIP) or the Federal Transportation Improvement Program (FTIP), the regional transportation agency must keep current a Regional Transportation Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP has links with air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures (TCMs) to attain, and maintain, the State air quality standard.

Goals

- Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.
- Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.

Policies

- Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated Kern Council of Governments as the County's Congestion Management Agency (CMA).

Policy 2: The Congestion Management Agency is responsible for developing, adopting, and annually updating a Congestion Management Plan. The Plan is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also Kern Council of Governments), regional transportation providers, local governments, Caltrans, and the air pollution control district.

Implementation Measures

Measure A: Kern County Council of Governments should request the proper consultation from County of Kern to develop and update the proper congestion management program.

Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.

2.5.1 Trucks and Highways

The Kern County road network handles a high ratio of heavy truck traffic. State highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.

Goal 2: Reduce potential overweight trucks.

Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.

Policies

Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.

2.5.4 Transportation of Hazardous Materials

Goal

Goal 1: Reduce risk to public health from transportation of hazardous materials.

Policy

Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.

Policy 2: Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.

Implementation Measure

Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.

Chapter 3. Noise Element**3.3 Sensitive Noise Areas****Goals**

- Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.
- Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

- Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise
- Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.
- Policy 7: Employ the best available methods of noise control.

Implementation Measures

- Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.
- Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.
- Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn} .
- Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
- a) Be the responsibility of the applicant.

- b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
- c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.

Measure I: Noise analyses shall include recommended mitigation, if required, and shall:

- a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
- b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10 – 20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
- c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
- d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

Chapter 4. Safety Element

4.1 Introduction

Goal

Goal 1: Minimize injuries and loss of life and reduce property damage.

4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

Implementation Measures

Measure A: All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor's action could involve the establishment of a land use activity susceptible to such hazards.

Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.

4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Policy

Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Implementation Measure

Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.

Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

4.5 Landslides, Subsidence, Seiche, and Liquefaction

Policies

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

4.6 Wildland and Urban Fire

Policies

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

4.9 Hazardous Materials

Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.2 Importance of Energy to Kern County

Policies

- Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.
- Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

5.4.5 Solar Energy Development

Goal

- Goal 1: Encourage safe and orderly commercial solar development.

Policies

- Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.
- Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.
- Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.

5.4.7 Transmission Lines

Goal

- Goal 1: To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects.

Policy

- Policy 5: The County should discourage the siting of above-ground transmission lines in visually sensitive areas.

Kern County Zoning Ordinance

Title 19 of the Kern County Ordinance provides a description of permitted uses for the various zoning classifications within the County. The Zoning Ordinance consists of two primary parts: a Zoning Map that delineates the boundaries of zoning districts; and a Zoning Code that explains the purpose of the districts,

specifies permitted and conditional uses, and establishes development and performance standards. The intent of the Zoning Code is to protect public health, safety, and the general welfare of residents and visitors in the County. Together with the Zoning Map, the Zoning Code identifies the particular uses permitted on each parcel of land in the County and sets forth regulations and standards for development to ensure that the policies, goals, and objectives of the General Plan are implemented. In addition to land use regulations, the Zoning Code contains development standards that can lessen a new structure's impacts on a location or area. These standards control the height, setbacks, parking, lot coverage, gross floor area, etc. for new structures. The Zoning Code also regulates which uses are permitted in each of the County's zoning districts to ensure compatibility between land uses.

Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments (COG), and was adopted in August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, State, and federal agencies. New to the 2018 RTP, California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing needs and transportation planning.

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to: improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape our community's future.

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, State, and federal sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP/SCS. These new sources include adjustments to State and federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future State bonding programs, and mileage based user fees (Kern COG, 2018).

Kern County's Solid Waste Management Plan

The Solid Waste Management Plan is a comprehensive guide for all solid waste management activities in the County. The plan identifies the existing solid waste generation and disposal facilities in Kern County, estimates future solid waste disposal demand, and identifies programs to meet this future need.

Kern County and Incorporated Cities Hazardous Waste Management Plan

The Kern County and Incorporated Cities Hazardous Waste Management Plan focuses on the siting of hazardous waste disposal facilities, the transport of hazardous waste in the County, protection of water resources from hazardous waste contamination, and public education concerning the use and disposal of hazardous waste.

4.11.4 Impacts and Mitigation Measures

Methodology

The potential impacts associated with the project are evaluated on a qualitative basis through a comparison of the existing land use and the proposed land uses, in consideration of the applicable planning goals identified above. Compliance with the aforementioned policies is illustrated in consistency tables provided in the project Impacts section below. The change in the land use on the project site is significant if the project results in the effects described in the thresholds of significance below. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on land use.

A project could have a have a significant adverse effect on land use if the project would:

- a. Physically divide an established community; or
- b. 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.

Project Impacts

Impact 4.11-1: The project would cause a significant environmental impact due to physically dividing an established community.

The project would be developed on previously disturbed undeveloped land in an unincorporated area of Kern County. The project site is located in a rural area surrounded by undeveloped lands, agricultural lands, permitted solar facilities, a nut processing plant, and scattered rural residential uses, with the nearest residential land use (a single residential home) located 0.67 miles to the east of the project site. The nearest established community is Lost Hills located approximately 15 miles to the southeast of the project site. There are no communities immediately adjacent to the project site and the project site does have any public roadways that provide connectivity between residential locations. Thus, the project site would not create a

physical barrier between any established community or disallow travel between communities. The proposed project would not physically divide or restrict access to the Community of Lost Hills or any other community. Therefore, impacts related to the physical division of an established community would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including the improvements to the existing Arco Substation for the transport of renewable energy is not anticipated conflict with any applicable land use policies. Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project and the PG&E Interconnection Facilities.

Impact 4.11-2: The project would 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 Kern County General Plan and the Kern County Zoning Ordinance establish land use policies and regulations that are applicable to the project. The following discussion evaluates the project's consistency with these plans, policies and regulations in the lands for which the County has jurisdiction. Implementation of the project would require approval of two Conditional Use Permits and a Williamson Act Land Use Contract Cancellation from the Kern County Planning Commission and the Kern County Board of Supervisors. Approval of the CUPs and cancelation of the contract would be required to enable construction and operation of the proposed 60 megawatt (MW) solar facility and up to 55 MW battery energy storage system.

The project site is designated as 8.3 – Extensive Agriculture and 8.3/2.5 – Extensive Agriculture/Flood Hazard under Kern County's current General Plan (see **Figure 3-6: Existing General Plan Designations**, in Chapter 3). No change to the existing land use designations is required or proposed as part of the project. Therefore, the project would not cause a significant environmental impact due to a conflict with any land use plan or policy for the purpose of avoiding or mitigating an environmental effect in this regard.

As shown on Chapter 3, Project Description, **Figure 3-7: Existing Zoning Classifications**, the project site has a zone classification of A (Exclusive Agriculture). No changes in zone classification are proposed. According to Kern County Zoning Ordinance Chapters 19.12.030.G, solar energy electrical facilities are permitted within the A Zone District with the approval of a CUP.

Approval of the CUPs would allow for the construction and operation of the solar facility and enable generation of approximately 60 MW of renewable energy and installation of the BESS enabling storage of up to 55 MW of energy within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance. More specifically, the proposed CUPs are shown below:

- Conditional Use Permit (CUP 10, Map No. 3) to allow for the construction and operation of an approximate 60 MW solar facility, as well as ancillary structures including a 55 MW BESS, on the 640-

acre site within the A (Exclusive Agriculture) zone district pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.

- Conditional Use Permit (CUP 14, Map No. 3) to allow for the construction and operation of a microwave communications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.F of the Kern County Zoning Ordinance.

With approval of the CUPs, the proposed solar project would be an allowable use within the A Zone District. At the end of the project's operational term, the project proponent would determine whether the project site should be decommissioned and deconstructed or if it would seek an extension of its CUPs. If any portion of the project site is decommissioned, it would be converted to other uses in accordance with the applicable land use regulations in effect at that time.

In addition, as shown in Chapter 3, Project Description, **Figure 4.2-1: Williamson Act Land Use Contracts**, the project sites are within an area that has historically been used for agricultural crop production and one parcel within the proposed project is subject to an active Williamson Act Land Use contracts. The project would result in the cancellation of open space contracts made pursuant to the California Land Conservation Act of 1965; however, petitions have been filed as part of the proposed project for notice of nonrenewal and cancellation of each contract. The Williamson Act Land Use Contract Cancellation follows:

- Cancellation of a Williamson Act Contract to be processed for APN 043-210-17 within the proposed CUP boundary.

With the cancellation of the above Williamson Act Land Use Contract, the proposed project would not conflict with any land use plan, policy or regulation, in this regard.

Kern County General Plan

Table 4.11-2: Consistency Analysis with Kern County General Plan for Land Use, presents an evaluation of the project's consistency with the Kern County General Plan. The table lists the goals and policies identified above in the regulatory setting and provides analysis on the project's general consistency with overarching policies. Additionally, the table provides goals and policies of issue areas that are presented in more detail in other sections of the EIR. As evaluated in detail in **Table 4.11-2**, the project is generally consistent with the goals and policies of the Kern County General Plan.

Kern County Zoning Ordinance

As described in Section 4.11.2, Environmental Setting, the project is subject to the provisions of the Kern County Zoning Ordinance and is included within Kern County Agricultural Preserve Number 1 boundary, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture). As shown in Table 4.11-1, Project Site and Surrounding Land Uses and Zoning Classifications, above, and **Figure 3-7: Existing Zoning Classifications**, in Chapter 3, *Project Description*, the Kern County Zoning Ordinance designates the project site as being within the A (Exclusive Agriculture) zone district.

Pursuant to Sections 19.12.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned Exclusive Agriculture (A) subject to securing a Conditional Use Permit. The project proponent is requesting two CUPs to allow for the construction and operation of a 60 MW solar project and to allow for the construction and operation of microwave communications tower for the proposed project. Because the project's proposed zoning classifications are consistent with current Kern County Zoning Ordinance land use designations which allow solar development with a CUP, the proposed project would be consistent with

the proposed Zone Districts. As such, with approval of the CUPs, the proposed project would be consistent with applicable land use policies and regulations, and impacts related to consistency with the Zoning Ordinance would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated conflict with any applicable land use policies.

Mitigation Measures

No mitigation measures are required.

Level of Significance

Impacts would be less than significant for the project and the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative impact and analysis is a 6 mile buffer around the project's boundaries. This scope was selected to analyze the cumulative impact to regional land use patterns of project development in the area, and because there is some uniformity to existing land use patterns in this area. As described in more detail in Chapter 3, *Project Description*, in **Table 3-4: Cumulative Projects List**, of this EIR, 3 projects are located within the geographic scope, including one solar project. While the surrounding area is still relatively rural in nature, the project, along with related projects, has the potential to contribute to a cumulative influence on proposed land uses in and around the project site.

The anticipated impacts of the project in conjunction with cumulative development in the area of the project would increase the urbanization and result in the loss of agricultural space. However, potential land use impacts require evaluation on a case-by-case basis because of the interactive effects of a specific development and its immediate environment. As described in **Table 4.11-2: Consistency Analysis with Kern County General Plan for Land Use**, the proposed project would be consistent with the goals and policies of the Kern County General Plan. In addition, with approval of the CUPs and Williamson Land Use Act Contract Cancellation development of solar facilities for the proposed project would be an allowable use that would not conflict with the land use or zoning classification for the project site. Therefore, as proposed the project would be consistent with the goals and policies of the Kern County General Plan and the Kern County Zoning Ordinance and would therefore not contribute to a cumulatively considerable impact regarding land use.

Furthermore, all related projects would be required to separately undergo environmental review on a case-by-case basis in accordance with the requirements of CEQA. Each related project would also be required to demonstrate consistency with all applicable planning documents governing the project site, including the Kern County General Plan and the Kern County Zoning Ordinance. Should potential impacts be identified, appropriate mitigation would be prescribed that would likely reduce potential impacts to a less-than-significant level.

With regard to cumulative effects of utility-sized solar power generation facilities, there is a potential that outside factors, such as the development of newer technology, change in State or national policy that encourages the construction of such facilities, or other economic factors, could result in the abandonment of such facilities. Unlike other facilities that, once constructed, can be retrofitted and utilized for another specific use, solar power generation facilities have little opportunity for other uses should the project not be in operation. The potential for the cumulative effects caused by the abandonment of multiple solar facilities in Kern County could result in impacts on surrounding land uses should it be determined that these facilities are no longer viable commercial operations. Therefore, Mitigation Measure MM 4.11-1, which would require the implementation of a decommissioning plan to be carried out by the project proponent once the life of the project has ended, has been included to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County. While it is the intent of Kern County to promote the use of an alternative to fossil-fuel-generated electrical power in areas of the County that are identified to have suitable characteristics for production of commercial quantities of solar PV-generated electrical power, it is necessary to protect surrounding landowners from potential impacts associated with the abandonment of such facilities. With the implementation of Mitigation Measure MM 4.11-1, cumulative land use impacts would be considered less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated conflict with any applicable land use policies. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations governing land use.

Mitigation Measures

MM 4.11-1: Prior to issuance of any building permit, the project operator shall provide a Decommission Plan for review and approval by the Kern County Public Works Department or a County-contracted consulting firm at a cost to be borne by the project operator. The Decommission Plan shall factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from removal of support structures, and control of fugitive dust on the remaining undeveloped land. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. The assumption, when preparing the estimate, is that the project operator is incapable of performing the work or has abandoned the solar facility, thereby requiring Kern County to hire an independent contractor to perform the decommissioning work. In addition to submitting a Decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the decommissioning of the site as identified on the approved Decommission Plan in the event that at any point in time the project operator determines it is not in the company's best interest to operate the facility.

The financial assurance required prior to issuance of any building permit shall be established using one of the following:

- a. An irrevocable letter of credit;
- b. A surety bond;

- c. A trust fund in accordance with the approved financial assurances to guarantee the decommissioning work will be completed in accordance with the approved decommission plan; or
- d. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department.

The financial institution or Surety Company shall give the County at least 180 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed annually by the Kern County Public Works Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate those adequate funds exist to ensure decommissioning of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator decommission the site on their own, the County will not pursue forfeiture of the financial assurance.

Once decommissioning has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by the County shall be returned to the project operator.

Should any portion of the solar field not be in operational condition for a consecutive period of twelve 12 months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project operator may provide the director of the Kern County Planning and Natural Resources Department a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Director shall consider any such request at a Director's Hearing as provided for in Section 19.102.070 of the Kern County Zoning Ordinance. In no case shall a solar field that has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date, the solar facility was first deemed abandoned.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.11-1, cumulative impacts would be less than significant for the project. Cumulative impacts would be less than significant without mitigation for the Arco substation, access road, and Interconnection Facilities.

Project Consistency with the Kern County General Plan

Table 4.11-2: *Consistency Analysis with Kern County General Plan Policies for Land Use*, provides summarizes the consistency of the project with all applicable goals and policies of the Kern County General Plan and relevant planning documents that are applicable to the project site.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
KERN COUNTY GENERAL PLAN CHAPTER 1, LAND USE, OPEN SPACE AND CONSERVATION ELEMENT		
1.3 Physical and Environmental Constraints		
Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.	Consistent with implementation of Mitigation Measure MM 4.10-1.	Consistent with this policy, the project would develop a solar PV power generation and storage facility that is not located on a hazardous site. See Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR. As described in Section 4.7, <i>Geology and Soils</i> , of this EIR, the project site is not transected by a known active or potentially active fault and is not located within a State of California Alquist-Priolo Earthquake Fault Zone. In addition, construction of the proposed project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Adherence to all applicable regulations would mitigate any potential impacts associated with fault rupture adjacent to the proposed project site. Based on the absence of any known active faults that cross, or are located in close proximity to, the project site and project compliance with applicable ordinances of the Kern County Building Code, the potential impact of fault rupture would be less than significant. Additionally, the proposed project would implement the recommendations of the final design level geotechnical report. The final report's recommendations would be consistent with the Kern County Building Code (Chapter 17.08) and the most recent version of the California Building Code. As described in Section 4.10, <i>Hydrology and Water Quality</i> the project site avoids construction within the 100-year floodplain that is classified as having a 1 percent annual chance of flooding and no construction will occur in areas with special flood hazards, areas with flood-related erosion hazards, or areas with mudslide hazards. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance. Thus, final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.

		As such, with implementation of mitigation measures the project would be consistent with this goal.
Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.
Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.	Consistent..	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above. Final design for the Solar Facility would place all solar-related structures outside all FEMA-designated 100-yr floodplains designated Flood Zone A (1% annual chance floodplain or the 100-year floodplain). No construction would occur in areas with special flood hazards, areas with flood-related erosion hazards, or areas with mudslide hazards (i.e., mudflow). Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the proposed project would be consistent with this policy.
Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1 and Policy 9 of the Kern County General Plan, above .
Policy 11: Protect and maintain watershed integrity within Kern County.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1 and Policy 9 of the Kern County General Plan, above. As discussed in Section 4.10, <i>Hydrology and Water Quality</i> , of the EIR, the project site would implement BMPs during construction to avoid impacts to water quality. As described in Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR, the project would also implement Mitigation Measure MM 4.9-1 which would require the project proponent to

		provide a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.	Consistent and consistent with implementation of Mitigation Measures MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above. The project would implement Mitigation Measure MM 4.10-1 which would require the preparation of a storm water pollution prevention plan (SWPPP) which would require the project operator to conform to the requirements of Kern County's NPDES Program and that would include erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. The proposed project would also be required to implement a drainage plan that would minimize the potential for changes in onsite drainage patterns that could increase erosion and sedimentation. A grading permit would be obtained from the County prior to commencement of construction activities. According to Chapter 17.28 of the Kern County Grading Ordinance, which would ensure both structural and nonstructural BMPs such as filtration systems, energy dissipators, wash racks, etc., are included.
Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above. The project facilities would not be located in any floodways and the proposed project would be consistent with this measure.
Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above. The project has been designed and evaluated to ensure it would not be located in any floodway and would not impede or impact any floodwaters.
Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1 and Policy 9, Policy 11, and Measure H, of the Kern County General Plan, above.
Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation	Consistent and consistent with	See 1.3, <i>Physical and Environmental Constraints</i> , Policy 11 and Measure D of the Kern County General Plan, above. The

District and the California Regional Water Quality Control Board regarding soil disturbances issues.	implementation of Mitigation Measure MM 4.10-1.	project would implement BMPs in accordance with a SWPPP that would be required to comply with Kern County's National Pollutant Discharge Elimination System (NPDES) Applicability legislation. This ensure compliance with the State Water Resources Control Board's Construction General Permit, as applicable.
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1.4 Public Facilities and Services

Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.	Consistent with implementation of Mitigation Measures MM 4.14-2 through MM 4.14-4.	As discussed in Section 4.14, <i>Public Services</i> , of this EIR, the project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services and facilities. Further, Mitigation Measures MM 4.14-3 and MM 4.14-4 would provide a tax to the Kern County Auditor/Controller for all years of operation.
Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.	Consistent.	Public utility impacts are evaluated in Section 4.17, <i>Utilities and Service Systems</i> , of this EIR. As described therein, the project site is located within the Kern subbasin of the San Joaquin Valley Groundwater Basin. Water would be supplied by one of four area water purveyors that would meet the demand from local groundwater. The project, however would reduce overall water consumption by approximately 109 acre feet per year moving from agriculture to use as a solar facility. In addition, the project would place impermeable solar panels but the majority of the ground surface would remain uncovered and maintain permeability to recharge groundwater. changes to impermeable surfaces would be mitigated to avoid adverse impacts to infiltration and recharge, potential impacts to groundwater supply would be less than significant. Water supply is discussed in more detail in Section 4.17, <i>Utilities and Service Systems</i> , of this EIR.
Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.	Consistent with implementation of Mitigation Measure MM 4.14-2.	The proposed project would construct and operate a 60 MW solar facility. The proposed project would construct one gen-tie route.. All infrastructure improvements associated with the proposed project would be fully funded by the project

		<p>proponent. No further improvements are anticipated as a part of the project. However, should improvements be made, the project proponent would coordinate with the County to ensure that the cost of the infrastructure improvement is properly funded. Additionally, as discussed in Section 4.14, <i>Public Services</i>, the project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services. The project would also implement Mitigation Measures MM 4.14-3 and MM 4.14-4, if the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation.</p>
<p>Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.17-1.</p>	<p>Public utility impacts are evaluated in Section 4.17, <i>Utilities and Service Systems</i>, of the EIR. As described therein, the project would have less-than-significant impacts on water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities. With the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction and operation, resulting in less than significant impact to solid waste providers.</p>
<p>Policy 6: The County will ensure adequate fire protection to all Kern County residents.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.14-2.</p>	<p>See 1.4, Public Services and Facilities, Goal 1, above. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.</p>

Policy 7: The County will ensure adequate police protection to all Kern County residents.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, Public Services and Facilities, Goal 1, above. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis and the applicant, that adequate public or private services and resources are available to serve the proposed development.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, Public Services and Facilities, Policy 3, above. Also, the project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for service and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.	Consistent with implementation of Mitigation Measure MM 4.14-2	See 1.4, Public Services and Facilities, Goal 1, above. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	Consistent.	Project effects related to utilities are discussed in Section 4.17, <i>Utilities and Service Systems</i> , of this EIR. The project would result in less-than-significant impacts to utilities. Furthermore, the proposed project would include the development of a solar PV power generating facility that would produce approximately 60 MW, which would be delivered to the grid, and available to utility providers to serve customers and meet electricity demand..
Measure D: Involve utility providers in the land use and zoning review process.	Consistent with implementation of	See 1.4, Public Services and Facilities, Policy 3, above. All applicable project documents have been sent to utility providers for review and comment. These providers will

	Mitigation Measure MM 4.17-1.	continue to be notified of all publicly available documents. In addition, the applicant has worked with PG&E to coordinate delivery of energy to the electrical grid.
Measure J: Ensure that the Superintendent of Schools and the respective school districts are informed of development proposals and are afforded the opportunity of evaluating their potential effect on the physical capacity of school facilities.	Consistent	The Kern County Superintendent of Schools was informed of this project during the project's Notice of Preparation of a Draft Environmental Impact Report. See 1.4, <i>Public Services and Facilities</i> , Goal 1, above; the project would be subject to CIC and SCIC fees that would contribute to future school facility improvements.
Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.	Consistent with implementation of Mitigation Measure MM 4.14-1 and MM 4.14-2.	Impacts to fire protection services are evaluated in Section 4.14, <i>Public Services</i> , of this EIR. Mitigation Measure MM 4.14-1 requires implementation of a fire safety plan during project construction and operation that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services onsite. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities and assuring the provision of adequate public services and facilities.
1.9 Resources		
Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.	Consistent.	The project site is located on land that is zoned as A (Exclusive Agriculture) and implementation of the proposed project would preclude livestock grazing on the site. Other uses besides agriculture, including solar energy generation and storage, are permitted within the A Districts with the approval of a CUP. The project would not involve additional change in the existing environment besides those described in this EIR and would not directly lead to other projects that would result in the loss of grazing land. Direct disturbance related to the project would be approximately 620 acres. Therefore, the proposed project would be consistent with this goal.
Goal 2: To protect areas of important mineral, petroleum, and agricultural resource potential for future use.	Consistent	See 1.9, <i>Resource</i> , Goal 1, above. As discussed in Section 4.12, <i>Mineral Resources</i> , of the EIR, the project site where the

		solar arrays would be developed is not designated as a mineral resource zone by the Conservation's State Mining and Geology Board. Installation of solar panels on the site would not impede access to mineral resources or potential mineral operations in adjacent areas. The project would not interfere with current oil and mineral extraction operations, and would not result in the loss of land designated for mineral resources.
Goal 3: To ensure that the development of resource areas minimize effects on neighboring resource lands.	Consistent.	The solar facilities are compatible with open space, wind energy, and other resource management land uses.
Goal 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.	Consistent	The project would develop solar PV power generating facilities designated to produce approximately 60 MW of solar power and store up to 55 MW of battery energy storage. The location of the site would ensure a safe and orderly development of the solar facilities. Additionally, the NOP of this EIR was sent to state and federal agencies requesting their input to ensure that appropriate information about the project site were being gathered. Similarly, this EIR will also be circulated to these agencies, and staff will have the opportunity to comment on the environmental analyses. Therefore, the County is complying with this goal for the project.
Goal 5: Conserve prime agricultural lands from premature conversion	Consistent.	As discussed in Section 4.2, <i>Agriculture and Forestry Resources</i> , of this EIR, the project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Consistent with this policy, Prime Farmlands would not be affected by the proposed project.
Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.	Consistent.	Consistent with this policy, the proposed project would develop a solar PV power generating facility designed to produce approximately 60 MW of solar power. The project would develop a clean energy source that would create fewer fossil fuel emissions; thus, protecting the environment.
Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.	Consistent.	Impacts on natural resources are avoided or minimized through the design of the project and would not affect long term use of the site. The project implements the General Plan policy of maximizing utilization of available solar resources.

Policy 5: Areas of low intensity agriculture use (Map Code 8.2 (Resource Reserve), Map Code 8.3 (Extensive Agriculture), Map Code 8.5 (Resource Management)) should be of an economically viable size in order to participate in the State Williamson Act Program/Farmland Security Zone Contract.	Consistent	See 1.9, <i>Resource</i> , Goal 5, of the Kern County General Plan, above. As described further in Section 4.2, <i>Agriculture and Forestry Resources</i> , benefits from cancellation of the Williamson Act. With approval of the cancellation of the Williamson Act contract, the project would not conflict with the intent of this policy.
Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.	Consistent.	See 1.9, <i>Resource</i> , Goal 5, of the Kern County General Plan, above.
Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Policy 11 and Measure D and Measure N of the Kern County General Plan, above. The project would not result in the removal of alteration of any drainages.
Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.	Consistent.	See 1.9, <i>Resource</i> , Goal 5, of the Kern County General Plan, above.
Policy 14: Emphasize conservation and development of identified mineral deposits.	Consistent	As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the proposed project is consistent with this policy, no development would occur that would impact identified mineral deposits. No land located within the project site boundaries are located within a designated mineral recovery area per the Kern County General Plan. The project area is not located on lands classified by a MRZ by the CGS.
Policy 16: The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission.	Consistent	The project proposes the development of a PV power generating facility designed to produce up to 60 MW of solar power and 55 MW of battery energy storage. Consistent with this policy, the proposed project would generate solar energy and offset an equivalent amount of fossil fuel-generated electrical power. The project is being designed to comply with all applicable design and building standards administered by the County.

Policy 25: Discourage incompatible land use adjacent to Map Code 8.4 Mineral and Petroleum areas.	Consistent	See 1.9, <i>Resource</i> , Policy 14, of the Kern County General Plan, above.
Measure B: Areas designated as Resource Reserve (Map Code 8.2), Extensive Agriculture (Map Code 8.3), Resource Management (Map Code 8.5) that are under Williamson Act Contracts or Farmland Security Zone Contracts will have a minimum parcel size of 80 acres until such time as a contract is expired or is cancelled, at which time the minimum parcel size will become 20 acres.	Consistent	The project site is on approximately 640 acres of privately owned land in unincorporated portions of Kern County. The project site is composed of two separate parcels. One parcel (APN 042-210-17, approx. 485 acres), is currently under a Williamson Act contract. Cancellation of the Williamson Act contract, pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest has been submitted. With the cancellation of the Williamson Act contract, the project site would continue to be 640 acres and the individual parcel size would continue to exceed 80 acres. Therefore, the project would be consistent with the minimize acreage sizes specified under this measure.
Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.	Consistent	See 1.9, <i>Resource</i> , Policy 14, of the Kern County General Plan, above.
Measure K: Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).	Consistent	The Kern County Zoning Ordinance designates the project site as being within the A (Exclusive Agriculture) zone district. The project site is included within Kern County Agricultural Preserve Number 1 boundary, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture). Pursuant to Section 19.12.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for A (Exclusive Agriculture) Exclusive Agriculture subject to a CUP. The project proponent is requesting a CUP to allow for the construction and operation of a 60 MW solar facility. Because the project's zoning classifications are consistent with current Kern County Zoning Ordinance land use designations which allow solar development with a CUP, the project would be consistent with the its zoning classification with this discretionary approval. As such, with approval of the CUP, the project would be consistent with applicable land use policies and regulations. Additionally, the project would not be located in an active oilfield or mineral extraction area.

1.10 General Provisions

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

Consistent with implementation of Mitigation Measure MM 4.14-2.

Consistent with this goal, the proposed project requires consideration and approval of a Conditional Use Permit as well as other discretionary actions that ensure compliance with all policies. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.

1.10.1 Public Services and Facilities

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

Consistent with implementation of Mitigation Measure MM 4.14-2.

See 1.4, *Public Facilities and Services*, Goal 1, above. Impacts to public services are evaluated in Section 4.14, *Public Services*, of this EIR. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Consistent with implementation of Mitigation Measure MM 4.14-2.

Public service impacts are evaluated in Section 4.14, *Public Services*, of this EIR. This EIR serves to comply with this policy. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Consistent.

See 1.4, *Public Facilities and Services*, Goal 1 and Policy 1, above.

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and

Consistent.

See 1.4, *Public Facilities and Services*, Goal 5. Water and wastewater impacts are evaluated in Section 4.10, *Hydrology*

Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

and Water Quality, of this EIR. During construction, bottled water would be provided and portable toilets and hand washing facilities are proposed. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.

1.10.2 Air Quality

Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.

Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-2.

Air quality and GHG impacts are evaluated in Sections 4.3, *Air Quality*, and 4.8, *Greenhouse Gas Emissions*, of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-2, which would reduce impacts to air quality to the extent feasible. Air quality mitigation measures include diesel emission-reduction measures during construction, fugitive dust control measures, and Valley Fever exposure minimization measures.

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:

- (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
- (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Consistent.

See 1.10.2, *Air Quality*, Policy 18, above. This EIR serves to comply with this policy. The project cannot reduce impacts to less than significant even with required mitigation. Appropriate findings under CEQA would be required to be made by the decision makers in order to approve the project despite the significant and unavoidable cumulative impacts on air quality.

Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as

Consistent with implementation of

Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. As discussed therein, implementation of

required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.	Mitigation Measures MM 4.3-2	Mitigation Measure MM 4.3-2 would further reduce fugitive dust emissions during construction and operation, in compliance with the adopted rules and regulations of the San Joaquin Valley Air Pollution Control District on ministerial permits.
Policy 21: The County shall support air districts efforts to reduce PM ₁₀ and PM _{2.5} emissions.	Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would further reduce PM ₁₀ and PM _{2.5} emissions during construction and operation.
Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-2.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-2, which would reduce impacts to air quality to the extent feasible. The project would be in compliance with all applicable San Joaquin Valley Air Pollution Control District, rules and regulations.
Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.	Consistent.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, the necessary discretionary permits shall be referred to the San Joaquin Valley Air Pollution Control District for review and comment.
Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to: a. Minimizing idling time. b. Electrical overnight plug-ins.	Consistent with implementation of Mitigation Measures MM 4.3-1	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, implementation of Mitigation Measure MM 4.3-1 would require diesel exhaust reduction strategies.
Measure H: Discretionary projects may use one or more of the following to reduce air quality effects: a. Pave dirt roads within the development. b. Pave outside storage areas. c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans. d. Use of alternative fuel fleet vehicles or hybrid vehicles. e. Use of emission control devices on diesel equipment.	Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-2 would further reduce adverse air quality effects.

- f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
- g. Provide bicycle lockers and shower facilities on site.
- h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
- i. The use and development of park and ride facilities in outlying areas.
- j. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM10 control measures as conditions of approval for subdivision maps, site plans, and grading permits.

Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2.

Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would further reduce PM₁₀ and PM_{2.5} emissions during construction and operation.

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Consistent with implementation of Mitigation Measures MM 4.5-1, through MM 4.5-4.

Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR. This EIR serves to comply with this policy and includes Mitigation Measures MM 4.5-1 through MM 4.5-4 to promote the preservation of cultural and historic resources where necessary.

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Consistent with implementation of Mitigation Measures MM 4.5-3.

Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR. Consistent with this measure, copies of reports will be provided to the Kern County Planning and Natural Resources Department and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield, per Mitigation Measure MM 4.5-3.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

Consistent with implementation of Mitigation Measures MM 4.5-1 through 4.5-4.

Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA. This EIR serves to comply with this policy.

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Consistent with implementation of

Paleontological resource impacts are evaluated in Section 4.7, *Geology and Soils*, of this EIR. Mitigation Measures MM 4.7-1 which would reduce potential impacts to known paleontological resources through hiring a qualified

	Mitigation Measures MM 4.7-1.	paleontologist shall be retained to monitor all ground-disturbing activity, document, and implement measures as needed.
Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.	Consistent.	Tribal Cultural resource impacts are evaluated in Section 4.16, <i>Tribal Cultural Resources</i> , of this EIR. Consistent with this measure, notification regarding the proposed project were accomplished in accordance with the established procedures for discretionary projects and CEQA documents.
Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.	Consistent with implementation of Mitigation Measure MM 4.5-1.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. This EIR serves to comply with this measure and includes Mitigation Measure MM 4.5-1, which would require consultation with the Native American monitor(s) to conduct a Cultural Resources Sensitivity Training for all personnel working on the proposed project.
1.10.5 Threatened and Endangered Species		
Goal 1: Ensure that the County can accommodate anticipated future growth and development while a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-15, MM 4.9-1 through 4.9-4, MM 4.10-1, and MM 4.14-1 through 4.14-5.	<p>As discussed in Section 4.4, Biological Resources, of this EIR, the project would potentially impact special-status plant and wildlife species. In an effort to preserve these valuable natural resources, the project would implement Mitigation Measures MM 4.4-1 through MM 4.4-17. Jurisdictional waters would not be impacted under the proposed project.</p> <p>As described in Section 4.10, Hydrology and Water Quality, of this EIR, the southerly portion of the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. The project, however, would not result in the construction of any physical facilities in this area. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1.</p> <p>As discussed in Section 4.9, Hazards and Hazardous Materials, Mitigation Measures MM 4.9-1 through MM 4.9-3 would reduce hazards impacts and involve waste and debris management, preparation of a hazardous materials business plan, limitations on herbicide use, and contamination of subsurface materials.</p> <p>As discussed in Section 4.14, Public Services, of this EIR, implementation of Mitigation Measures MM 4.14-1 through</p>

		MM 4.14-5 would require the project to implement a Fire Safety Plan; pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services, as well as other public services and facilities, resulting from the project in the form of a Cumulative Impact Charge (CIC); allocation of sales and use taxes; and wherever feasible, hire project employees from the local workforce. With implementation of these Mitigation Measures, the project would be consistent with this measure.
Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-15.	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. This EIR serves to comply with this policy and reduce potential impacts with mitigation. Additionally, the project would be developed and operated in accordance with all local, state and federal laws pertaining to the preservation of sensitive species.
Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-15.	Biological Resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. This EIR serves to comply with this policy and reduce potential impacts with mitigation. As part of the biological resources evaluation and habitat assessment conducted for the project, relevant state and federal agencies were contacted to ensure that appropriate information about the project site were being gathered. Specifically, an NOP of this EIR was sent to state and federal agencies requesting their input on the biological resource evaluation. Similarly, this EIR will also be circulated to these agencies, and staff will have the opportunity to comment on the biological resources evaluation. Therefore, the County is complying with this policy for the project.

Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-15.	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. The project site is located within the Valley Region and is consistent with the applicable plans and policies related to preservation, mitigations, and reduction of impacts to biological resources. Accordingly, implementation of Mitigation Measures MM 4.4-1 through MM 4.4-15 would further increase cooperative efforts with local, State, and federal agencies to support threatened and endangered plant and wildlife.
Policy 31: Under the provisions of the California Environmental Quality Act, the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document is prepared.	Consistent.	See 1.10.5, <i>Threatened and Endangered Species</i> , Policy 28, above.
Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.	Consistent.	Biological resource impacts and impacts to riparian areas, are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. The Biological Technical Resources Report found there are no perennial streams or riparian corridors that drain to the project site and there are no waters or wetlands of the United States and no riparian streams. The County will maintain open communication with all trustee and responsible agencies related to biological resources and will respond to all comments from reviewing agencies during the CEQA process.
Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.	Consistent.	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA.
Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.	Consistent with implementation of Mitigation Measure MM 4.4-1 through MM 4.4-15.	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Consistent with this measure, the project would implement mitigation measures that require consultation with the California Department of Fish and Wildlife. The County has and will respond to all comments from reviewing agencies during the CEQA process.

1.10.6 Surface Water and Groundwater

Policy 34: Ensure that water quality standards are met for existing users and future development.	Consistent with implementation of Mitigation measures MM 4.9-1.	Water quality impacts are evaluated in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. Consistent with this policy, the proposed project would implement best management practices during construction to avoid impacts to water quality. The project would also implement a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.	Consistent.	See 1.4, <i>Public Facilities and Services</i> , Goal 5, above.
Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.9, <i>Resources</i> , Policy 11, above.
Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.	Consistent with implementation of Mitigation Measures MM 4.10-1.	Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, discusses impacts and mitigation for potential impacts to the watershed during construction from pollutants, alteration of flow patterns, and changes in impervious surfaces. Consistent with this policy, construction-related impacts related to alteration of flow patterns and impervious surfaces would be less than significant.
Measure Y: Promote efficient water use by utilizing measures such as: (i) Requiring water-conserving design and equipment in new construction; (ii) Encouraging water-conserving landscaping and irrigation methods; and (iii) Encouraging the retrofitting of existing development with water conserving devices.	Consistent.	See 1.4, <i>Public Facilities and Services</i> , Goal 5, above.
1.10.7 Light and Glare		
Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	Consistent with implementation of Mitigation Measures MM 4.15 through MM 4.1-7.	Aesthetic impacts are evaluated in Section 4.1, <i>Aesthetics</i> , of this EIR. This EIR serves to comply with this policy and reduce potential impacts through implementation of mitigation measures.
Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Consistent with implementation of Mitigation Measures	See 1.10.7, <i>Light and Glare</i> , Policy 47, above.

	MM 4.1-5 through MM 4.1-7.	
Measure AA: The County shall utilize <i>CEQA Guidelines</i> and the provisions of the Zoning Ordinance to minimize the impacts of light and glare on adjacent properties and in rural undeveloped areas.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7.	See 1.10.7, <i>Light and Glare, Policy 47</i> , above.

CHAPTER 2 CIRCULATION ELEMENT

2.1 Introduction

Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.
Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.	Consistent.	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the proposed project would maintain a minimum LOS D or better for all roads throughout the County.

2.3.3 Highway Plan

Goal 5: Maintain a minimum Level of Service (LOS) D.	Consistent.	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the proposed project would maintain a minimum LOS, D or better for intersections utilized to access the project.
Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.	Consistent.	Section 4.15, <i>Transportation</i> , of this EIR provides a discussion of County circulation consistency. The project would include internal service roads. Consistent with this policy, all road improvements would be completed per Caltrans and/or County code and regulations. If access roads need to be built along lines other than those on the circulation diagram map, the project proponent would negotiate necessary easements to allow this, in accordance with the County.
Policy 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land	Consistent	See 2.3.3, Highway Plan, Policy 1, of the Kern County General Plan, above. The project proposes one access road connecting King Rd to the project site. As discussed in Section 4.15, <i>Transportation</i> , of this EIR project operations anticipates approximately 13 trips per day and would be in accordance with this policy. The proposed project would be consistent

<p>Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection “grid” will comprehensively apply to the Mountain Region.</p>		<p>with Kern County General Plan Circulation Element Highway Plan.</p>
<p>Policy 3: This plan’s road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.</p> <ul style="list-style-type: none"> • Expressway [Four Travel Lanes] Minimum 110-foot right-of-way; • Arterial [Major Highway] Minimum 110-foot right-of-way; • Collector [Secondary Highway] Minimum 90-foot right-of-way; • Commercial-Industrial Street Minimum 60-foot right-of-way; and • Local Street [Select Local Road] Minimum 60-foot right-of-way. 	<p>Consistent.</p>	<p>Traffic impacts are evaluated in Section 4.15, <i>Transportation</i>, of this EIR. Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements.</p>
<p>Measure A: The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur.</p>	<p>Consistent.</p>	<p>See 2.3.3, <i>Highway Plan</i>, Policy 3, of the Kern County General Plan, above.</p>
<p>2.3.4 Future Growth</p>		
<p>Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.</p>	<p>Consistent.</p>	<p>See 2.3.3, <i>Highway Plan</i>, Policy 3, of the Kern County General Plan, above.</p>

<p>Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.15-2</p>	<p>Traffic impacts are evaluated in Section 4.15, <i>Transportation</i>, of this EIR. Consistent with this policy, the proposed project would maintain a minimum LOS C, D or better for intersections utilized to access the project. Additionally, implementation of Mitigation Measure MM 4.15-2 would require the preparation of a Construction Traffic Control Plan to be reviewed and approved by Kern County Public Works Department and Caltrans, which would further reduce impacts to traffic and transportation.</p>
<p>Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.</p>	<p>Consistent.</p>	<p>See 2.3.3, <i>Highway Plan</i>, Policy 1, above.</p>
<p>Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.</p>	<p>Consistent.</p>	<p>Consistent with this policy, the project proponent would fund improvements to project-related driveways that provide access to County, city, or State roads.</p>
<p>Policy 6: The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.</p>	<p>Consistent.</p>	<p>The proposed project would not develop a public road. However, consistent with this policy, the project proponent would be required to obtain approval from the County via an encroachment permit where any proposed private access driveways for the project would intersect public right-of-way.</p>
<p>Measure A: The County should relate traffic levels to road capacity and development levels. To accomplish this, the Kern County Roads Department and the Kern County Planning and Natural Resources Department should set up a monitoring</p>	<p>Consistent</p>	<p>See 2.3.3 Highway Plan, Policy 3, of the Kern County General Plan, above</p>

program. The program would identify traffic volume to capacity ratios and resulting level of service. The geographic base of the program would be traffic zones set up by Kern Council of Governments.

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

Consistent.

Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

2.3.10 Congestion Management Programs

Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.

Consistent with Mitigation Measures MM 4.15-1 and MM 4.15-2.

Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this goal, the proposed project would implement Mitigation Measures MM 4.15-1 and MM 4.15-2, and comply with the requirements of the Kern Council of Government's Congestion Management Program.

Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements

Consistent

Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this policy, the project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards and would not conflict with the Kern COG's Congestion Management Plan (CMP).

Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated Kern Council of Governments as the County's Congestion Management Agency (CMA).

Consistent with Mitigation Measures MM 4.15-2.

See 2.3.10, Congestion Management Program, Goal 1 and 2, above. Consistent with this goal, the proposed project would implement Mitigation Measure MM 4.15-2 and prepare a Construction Traffic Control Plan to be reviewed and approved by Kern County Public Works Department and Caltrans, which would further reduce impacts to traffic and transportation.

Policy 2: The Congestion Management Agency is responsible for developing, adopting, and annually updating a Congestion Management Plan. The Plan is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also Kern Council of Governments), regional transportation providers, local governments, Caltrans, and the air pollution control district.

Consistent

See 2.3.10, Congestion Management Program, Goal 2, above. Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this policy, the project would not conflict with the Kern COG's CMP.

Measure A: Kern County Council of Governments should request the proper consultation from County of Kern to develop and update the proper congestion management program.	Consistent	See 2.3.10, Congestion Management Program, Goal 1 and 2, above.
Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.	Consistent	See 2.3.10, Congestion Management Program, Goal 1 and 2, above.
2.5.1 Trucks and Highways		
Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.	Consistent with Mitigation Measure MM 4.15-2.	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measure MM 4.15-2, which would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards, which would ensure the provision of heavy truck transportation resulting from project implementation in the safest way possible.
Goal 2: Reduce potential overweight trucks.	Consistent with Mitigation Measure MM 4.15-2.	See 2.5.1, <i>Trucks and Highways</i> , Goal 1, above.
Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.	Consistent with Mitigation Measure MM 4.15-2.	See 2.5.1, <i>Trucks and Highways</i> , Goal 1, above.
Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.	Consistent with Mitigation Measure MM 4.15-2.	As discussed in Section 4.15, <i>Transportation</i> of this EIR, coordination and consultation with Caltrans will occur as necessary, consistent with this policy.
2.5.4 Transportation of Hazardous Materials		
Goal 1: Reduce risk to public health from transportation of hazardous materials.	Consistent with implementation of Mitigation Measure MM 4.9-1.	Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR provides a discussion of Hazardous Materials Transportation and existing regulatory requirements of the California Vehicle Code that pertain to transport of hazardous materials and wastes. Consistent with this policy, the project would not pose a significant risk to public health from transportation of

		hazardous materials with implementation of Mitigation Measure MM 4.9-1, which requires the preparation of a Hazardous Materials Business Plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.
Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	Consistent with implementation of Mitigation Measure MM 4.9-1.	See 2.5.4, <i>Transportation of Hazardous Materials</i> , Goal 1, above.
Policy 2: Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.	Consistent with implementation of Mitigation Measure MM 4.9-1	See 2.5.4, <i>Transportation of Hazardous Materials</i> , Goal 1, above.
Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.	Consistent with implementation of Mitigation Measure MM 4.9-1	See 2.5.4, <i>Transportation of Hazardous Materials</i> , Goal 1, above.

KERN COUNTY GENERAL PLAN CHAPTER 3, NOISE ELEMENT

3.3 Sensitive Noise Areas

Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.	Consistent.	Noise impacts, sensitive receptors and County noise thresholds are evaluated in Section 4.13, <i>Noise</i> , of this EIR. As discussed in that section, the proposed project would not cause significant impacts to sensitive receptors. Thus, the project would be consistent with this goal.
Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.	Consistent	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with existing land use designations of the project site.

Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above.
Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above. Consistent with this policy the project would be encouraged to provide vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.13, <i>Noise</i> , of this EIR.
Policy 7: Employ the best available methods of noise control.	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above.
Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.	Consistent.	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with the land use and zoning designations of the project site.
Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.	Consistent.	Consistent with this measure, the proposed project will be reviewed for conformance with the policies outlined in this element.
Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L _{dn} and interior noise levels in excess of 45 dB L _{dn} .	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1 and Measure A, of the Kern County General Plan.
Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall: <ul style="list-style-type: none"> a) Be the responsibility of the applicant. b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics. c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services 	Consistent.	Consistent with this measure, the proposed project has prepared an acoustical analysis in accordance with the requirements of Chapter 3, <i>Noise Element</i> , Measure G, of the Kern County General Plan.

Department. All recommendations therein shall be complied with prior to final approval of the project.

Measure I: Noise analyses shall include recommended mitigation, if required, and shall: <ul style="list-style-type: none"> a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions. b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10–20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element. c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided. 	Consistent.	Consistent with this measure, a noise assessment was conducted for the proposed project and is referenced in Section 4.13, <i>Noise</i> , of this EIR. In accordance with this measure, the noise assessment includes representative noise measurements, recommended best management practices, estimated noise levels, in terms of CNEL, and estimates of noise exposure.
Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.	Consistent.	Consistent with this measure, the recommendations and requirements imposed pursuant to the findings of the acoustical analysis would be included with project implementation.

KERN COUNTY GENERAL PLAN CHAPTER 4, SAFETY ELEMENT

4.1 Introduction

Goal 1: Minimize injuries and loss of life and reduce property damage.	Consistent.	Consistent with this goal, the project would be required to comply with adopted safety regulations, such as the Fire Code, and related policies in the General Plan.
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4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

Measure A: All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor's action could involve the establishment of a land use activity susceptible to such hazards.	Consistent.	Section 4.7, <i>Geology and Soils</i> , of this EIR, discusses potential geologic hazards, Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, discusses potential flood hazards, and Section 4.18, <i>Wildfire</i> , of this EIR discusses potential fire hazards as a result of project implementation. Consistent with
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		this measure, all hazards have been considered as part of this analysis.
Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.	Consistent.	Consistent with this policy, the proposed project would not include development for human occupancy, and would not be located near an active earthquake fault.
4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure		
Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.	Consistent.	Consistent with this policy, the proposed project would not include development for human occupancy, and would not be located near an active earthquake fault.
Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Measure D, of the Kern County General Plan, above.
Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.	Consistent.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.
4.5 Landslides, Subsidence, Seiche, and Liquefaction		
Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	Consistent.	As discussed in Section 4.7, <i>Geology and Soils</i> , of this EIR, conditions for landslides are also not present at the site which is characterized by relatively gradual inclines across the site. Grading would be subject to compliance with the NPDES General Construction Permit requirements and the implementation of required BMPs would have the ability to minimize the potential for erosion or loss of topsoil. Adherence to the requirements of the Kern County Building Code and the California Building Code (CBC) would ensure that effects from seismic-related ground failure including liquefaction would be minimized. Groundwater is anticipated to be greater than 100 feet and the site is not within an earthquake zone of required

investigation for liquefaction (BSK, 2021). See Section 4.7, *Geology and Soils*, of this EIR.

4.6 Wildland and Urban Fire

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Consistent with implementation of Mitigation Measure MM 4.14-1 and Mitigation Measure MM 4.14-2.

Consistent with this policy, impacts on emergency services and facilities are discussed and evaluated in Section 4.14, *Public Services*, of this EIR. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.

Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Consistent with implementation of Mitigation Measure MM 4.14-1.

The project would not interfere or prohibit the County's ability to meet this policy. Mitigation Measure MM 4.14-1 requires the proponent to develop a fire safety plan for use during construction and operational activities. All onsite employees would be trained on fire safety and how to respond to onsite fires, should they occur. See Sections 4.9, *Hazards and Hazardous Materials*, 4.14, *Public Services*, and 4.18, *Wildfire*, of this EIR.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Consistent with implementation of Mitigation Measure MM 4.15-2.

Section 4.15, *Transportation*, of this EIR includes Mitigation Measure MM 4.15-2 would require the approval of a Construction Traffic Control Plan, encroachments and or other necessary permits by Caltrans and/or the Kern County Roads Dept. The project proponent would develop and implement a fire safety plan for use during construction and operation.

Policy 6: All discretionary projects shall comply with the adopted fire code and the requirements of the fire department.

Consistent with implementation of Mitigation Measure MM 4.14-1.

Consistent with this policy, the project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department.

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Consistent with implementation of Mitigation Measure MM 4.14-1 and MM 4.14-2.

Consistent with this measure, the proposed project would implement Mitigation Measure MM 4.14-1, which would require preparation and implementation of a fire safety plan to ensure the provision of appropriate access. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State

of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.

4.9 Hazardous Materials

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Consistent with implementation of Mitigation Measure MM 4.14-1.

See 4.6, *Wildland and Urban Fire*, Policy 6, above.

KERN COUNTY GENERAL PLAN CHAPTER 5, ENERGY ELEMENT

5.2 Importance of Energy to Kern County

Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.

Consistent.

See 1.10.5, *Threatened and Endangered Species*, Policy 28, above.

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

Consistent.

See 3.3, *Sensitive Noise Areas*, Goal 1, above.

5.4.5 Solar Energy Development

Goal 1: Encourage safe and orderly commercial solar development.

Consistent.

Consistent with this goal, the proposed project requires consideration and approval of Conditional Use Permits as well as other discretionary actions that ensure compliance with all policies and would develop solar PV facilities that would generate 60 MW of solar energy, and would offset an equivalent amount of fossil fuel-generated electrical power. The site is on vacant land, and is located at a distance from established communities. The location of the site would ensure a safe and orderly development of the solar facilities.

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Consistent.

Consistent with this policy, the proposed project requires consideration and approval of Conditional Use Permits as well as other discretionary actions that ensure compliance with all policies would develop solar PV facilities capable of generating 60 MW of solar energy. Operation of the proposed project would improve air quality within the County and assist

		the County in meeting attainment goals. See Section 4.3, <i>Air Quality</i> , of this EIR.
Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.	Consistent.	Consistent with this policy, the project proposes the development of PV power generation and storage facilities in the Valley region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, requires consideration and approval of Conditional Use Permits as well as other discretionary actions that ensure compliance with all policies as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.
Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.	Consistent.	Consistent with this policy, the project proposes the development of PV power generation and storage facilities in the valley region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, requires consideration and approval of Conditional Use Permits as well as other discretionary actions that ensure compliance with all policies as well as adherence to all applicable local, state and federal regulations.
5.4.7 Transmission Lines		
Goal 1: To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects.	Consistent.	Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project's transmission lines would not pose significant environmental or public health and safety hazards.
Policy 5: The County should discourage the siting of above-ground transmission lines in visually sensitive areas.	Consistent.	See 5.4.7, Transmission Lines, Goal 1, above. Further, visual impacts are evaluated in Section 4.1, <i>Aesthetics</i> , of this EIR.

Section 4.12

Mineral Resources

4.12.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for mineral resources. It also describes the impacts on mineral resources that would result from implementation of the proposed project, and mitigation measures that would reduce these impacts, if applicable. Information used in the preparation of this section includes: the California Department of Conservation California Geological Survey (CGS), California Geologic Energy Management Division (CalGEM) [Prior to January 1, 2020, CalGEM was known as the California Division of Oil, Gas, and Geothermal Resources (DOGGR)], and Kern County publications and maps as cited throughout this section.

4.12.2 Environmental Setting

This section discusses the existing conditions related to mineral resources within the region and project area, including the project site.

Regional Setting

Mineral and petroleum resources are basic to Kern County's economy; Kern County produces more oil than any other county in California. Borax, cement and construction aggregates constitute major economic mineral resources. The Surface Mining and Reclamation Act of 1975 (SMARA) requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to its known or inferred mineral potential. In 1999, the State Geologist analyzed 2,971 square miles of land in Kern County to determine the location of mineral resource zones throughout the County. The MRZ categories are defined as follows (CGS, 1999):

- **MRZ-1:** Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves. Land included in MRZ-2a is of prime importance because it contains known economic mineral deposits.
- **MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain inferred mineral resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration could result in upgrading areas classified MRZ-2b to MRZ-2a.
- **MRZ-3a:** Areas containing known mineral occurrences of undetermined economic significance. Further exploration could result in reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.

- **MRZ-3b:** Areas containing inferred mineral occurrences of undetermined economic significance. Further exploration could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.
- **MRZ-4:** Areas containing no known mineral occurrence.

Table 4.11-1: *Classified Mineral Resources within Kern County*, demonstrates the classified mineral resources within Kern County that are part of the MRZ-2 group and, therefore, have a demonstrated mineral significance (as opposed to the MRZ-3 group, which has an undetermined mineral significance).

TABLE 4.12-1: CLASSIFIED MINERAL RESOURCES WITHIN KERN COUNTY

Mineral Resource	MRZ Classification	Number of Areas	Total Acreage
Borates	MRZ-2a and 2b	2	2,564
Limestone	MRZ-2a	4	2,008
Limestone	MRZ-2b	2	157
Silica	MRZ-2a	1	119
Pozzolan (essential cement additive)	MRZ-2b	1	72
Gold	MRZ-2a	3	849
Gold	MRZ-2b	8	6,619
Dimension Stone	MRZ-2a	2	527

SOURCE: CGS, 1999.

Petroleum Resources

As mentioned above, Kern County produces more oil than any other county in California. The valley floor area of Kern County and the surrounding lower elevations of the mountain ranges contain numerous deposits of oil and gas resources, a major economic resource for the County. The proposed project is not located within a known oil production field, nor does the site have known active or abandoned wells (DOC CalGEM, 2021). The project site is not within a mineral recovery area or within a designated mineral and petroleum resource site designated by the Kern County General Plan, nor is it identified as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. The project site is not located within the County's NR (Natural Resources) or PE (Petroleum Extraction) Zone Districts.

Sand and Gravel

Construction aggregates are a major economic mineral resource for Kern County (Kern County, 2009). Sand and gravel have been determined to be important resources for construction, development, and physical maintenance, from highways and bridges to swimming pools and playgrounds. The availability of sand and gravel affects construction costs, tax rates, and affordability of housing and commodities. The State of California has statutorily required the protection of sand and gravel operations. Because transportation costs are a significant portion of the cost of sand and gravel, the long-term availability of local sources of this resource is an important factor in maintaining the economic attractiveness of a community to residents, business, and industry. The major resources of sand and gravel in Kern County are in stream deposits along the eastern side of the San Joaquin Valley and in the Sierra Nevada foothills, approximately 22 miles north of the project site, and in alluvial fan deposits along the Tehachapi Mountains

at the southern end of Kern County, approximately 25 miles southeast of the project site. Most of the recent alluvium in the San Joaquin Valley floor is composed of sand used as a source of road base material (County of Kern, 2009).

Borax

Borax constitutes a major economic mineral resource for Kern County (Kern County, 2009). Borax, a borate mineral (a compound that contains Boron and oxygen), was discovered and put into production in 1872 in Nevada and later, in 1881, in Death Valley. Ironically, for five years the route traveled by Pacific Coast Borax Company's famous twenty mule team trains would pass within 15 miles of a buried deposit that would produce in about six minutes the equivalent tonnage hauled by the mule team during each trip. The discovery of borates in southeastern Kern County in the Kramer District was accidental, when a water well penetrated lakebeds containing colemanite (calcium borate) in 1913. In 1927 underground mining of the minerals kernite and borax began and continued until 1957, when underground operations ceased and open-pit mining began, eventually becoming the largest open-pit mine in California (State Mine ID #91-15-0022). This mine supplies about 40 percent of the world's supply of borates. There are several other sources of borate minerals in Kern County (CGS, 1999).

Limestone

Carbonate rocks were initially quarried in 1888 as a source of lime. By 1909 the limestone resources were used for the manufacture of Portland cement during the construction of the first Los Angeles aqueduct. Limestone has been mined continuously since 1921, just northeast of Tehachapi, for the manufacture of Portland cement. The Tehachapi Plant was joined by California Portland Cement Company's Mojave Plant in 1955 and National Cement Company's Lebec Plant in 1976, making Portland cement production second only to borates in terms of economic importance to the region. Cement production is a major economic resource in the County (CGS, 1999).

Dimension Stone

Dimension stone is natural rock materials quarried for the purpose of obtaining blocks or slabs that meet specification as to size (width, length, and thickness) and shape. Color grain texture and pattern, and surface finish, durability, strength, and polish ability are important selection criteria in determining dimension stone. Deposits of marble, sandstone, schist, and other rocks in Kern County have been sources of modest tonnages of building stone which have been utilized as dimension stone, field stone, rubble, and flagstone. Most of the dimension stone (marble and flagstone) was mined before 1904; field stone and flagstone have been mined mostly since about 1952 in the area around Randsburg (CGS, 1999).

Precious Minerals (Gold and Silver)

In terms of total dollar value and number of deposits, gold is the most important metallic mineral commodity that has been mined in Kern County. The earliest mining in Kern County was in 1851 at placer gold deposits in Greenhorn Gulch, which drains into the Kern River about midway between Democrat Springs and Miracle Hot Springs. The first lode mining was in 1852, and by 1865 gold was being mined in four districts around the Kern River. Gold was first prospected in eastern Kern in the 1860s, with the two largest mines being established in the 1890s. The Yellow Aster and Golden Queen mines located in eastern Kern have yielded almost half of the total gold output of the county. The principal sources of silver in Kern County

have been deposits in eastern Kern County. Although gold is the chief mineral in value, silver is predominant by a 5:1 ratio and is an important by-product of the gold ore (CGS, 1999).

Silica and Pozzolan

Pozzolan is defined as a porous variety of volcanic tuff or ash used in making hydraulic cement. Silica is a common material used to manufacture cement when it is combined with limestone, shells, and chalk (PCA, 2019). Regarding existing silica mineral resources, there is an existing quartzite body used by California Portland Cement Company in making cement. The quartzite has a drill indicated reserve of about eight million tons. An area on property controlled by Calaveras Cement Company (now known as the Lehigh Southwest Cement Company [Lehigh, 2002]) was under evaluation as an area containing pozzolan in 1998 (Koehler, 1999). A Surface Mining and Reclamation Plan for the extraction of pozzolan, for an area approximately 17 miles southwest of the City of Ridgecrest, was received by the Kern County Planning and Natural Resources Department (CUP 1, Map 92); an Early Consultation was circulated in accordance with CEQA in 2013 and on December 16, 2014 the Lehigh Southwest Cement Company was approved to be designated as an engineered municipal solid waste (EMSW) facility (CEQAnet, 2020).

Local Setting

The project site is currently vacant undeveloped land located just south of the Kern County/Kings County Line, in an unincorporated area of north-western Kern County, CA. The project site is approximately 2.5 miles northeast of Twisselman Road and Kings Road, approximately 16 miles south of Kettleman City, approximately 14 miles northwest of the community of Lost Hills, approximately 6 miles west of Interstate 5, and approximately 4 miles east of State Route 3. The proposed project is located in the northwestern portion of the Kern County Valley Region.

Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, rural residential uses, and other solar developments located to the south of the project site. The project site is not designated as a mineral recovery area by the Kern County General Plan, nor is it identified as a mineral resource zone (MRZ) by the Department of Conservation's State Mining and Geology Board. The project site is also not located within the boundaries of a specific plan, that could have additional mineral resource designations. Neither the project site or adjacent areas include land classified as a MRZ (DOC, 2016). There are no known oil, gas, or geothermal wells on the project site however, the Lost Hills Northwest Oil and Gas field is immediately adjacent to east of the project (CalGEM, 2021). The nearest active Oil and Gas wells are located to the east and southeast, the closest being approximately 0.8 miles east (CalGEM, 2021). Additionally, there are no active mines or petroleum extraction facilities within or immediately adjacent to the project site (DOC, 2021). The nearest mine to the project site is the Lost Hills Mine, an open pit Gypsum mine, approximately 9.7 miles southeast, and was an open pit sand and gravel mine (DOC, 2019a).

Other mines in the area include the Lost Hills Borrow Pit and the Mendiburu Livestock Inc. mine. **Figure 4.12-1: Mines within the Project Vicinity**, shows the mines within a 15-mile radius of the project area. **Table 4.12-2: Mines within the Project Vicinity**, lists the mines within a 15-mile radius of the project area, their distance from the project site, and the commodity being mined.



SOURCE: DOC, 2016, ArcGIS Pro, 2021

FIGURE 4.12-1: Mines Within the Project Vicinity

Draft Environmental Impact Report
Azalea Solar Project



Not to scale

TABLE 4.12-2: MINES WITHIN THE PROJECT VICINITY

Mine Title	Mine ID	Commodity	Distance from Project Site
Mendiburu Livestock Inc.	91-15-0109	Fill Dirt	12.8 miles southwest
Lost Hills Mine	91-15-0017	Gypsum	9.7 miles southwest
Lost Hills Borrow Pit	91-15-0082	Shale	12 miles southwest

SOURCE: DOC, 2016.

4.12.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

Geologic Energy Management Division

The California Department of Conservation/CalGEM is a State agency responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. CalGEM's regulatory program promotes the wise development of oil, natural gas, and geothermal resources in California through sound engineering practices, prevention of pollution, and implementation of public safety programs. To implement this regulatory program, CalGEM requires avoidance of building over or near plugged or abandoned oil and gas wells, or requires the remediation of wells to current CalGEM standards (DOC, 2019b).

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code, Sections 2710-2796) regulates surface mining operation to assure that adverse environmental impacts are minimized, and that mined lands are reclaimed to a usable condition. SMARA encourages the production, conservation, and protection of the state's mineral resources, recognizes that "the state's mineral resources are vital, finite, and important natural resources and the responsible protection and development of these mineral resources is vital to a sustainable California" (Public Resources Code, Section 2711), and requires the State Geologist to classify land into MRZs according to its known or inferred mineral potential. The primary goal of mineral land classification is to ensure that Local agencies use the classification information when developing land-use plans and when making land-use decisions that could preclude mining (DOC, 2021b). MRZs are defined in detail in the Regional Setting, above.

Local

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for mineral resources applicable to the project are provided below. The Kern County General Plan contains additional policies,

goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1. Land Use, Open Space and Conservation Element

1.9. Resource

Goals

- Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations that will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources or diminish the other amenities that exist in the County.
- Goal 2: To protect areas of important mineral, petroleum, and agricultural resource potential for future use.
- Goal 3: To ensure that the development of resource areas minimizes effects of neighboring resource lands.
- Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policies

- Policy 14: Emphasize conservation and development of identified mineral deposits.
- Policy 25: Discourage incompatible land use adjacent to Map Code 8.4 Mineral and Petroleum areas.

Implementation Measures

- Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.
- Measure K: Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).

4.12.4 Impacts and Mitigation Measures

Methodology

The project's potential impacts to mineral resources have been evaluated using a variety of sources, including a review of information from the California Department of Conservation, CGS, and Kern County publications and maps. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on mineral resources.

A project could have a significant adverse effect on mineral resources if it would:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Project Impacts

Impact 4.12-1: The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.

The project site is not located on lands designated as an MRZ by the State and the Project site is not known to contain mineral resources. Additionally, any proposed mineral resource extraction would require a Conditional Use Permit (CUP) to be secured from Kern County. The closest land designated as Map Code 8.4 (Mineral and Petroleum – Minimum 5 Acre Parcel Size) is approximately 3.5 miles southwest of the project site (Kern County, 2009). Additionally, no active mines or petroleum extraction facilities are located within or immediately adjacent to the project site. As identified in **Table 4.12-2: Mines within the Project Vicinity**, the nearest past mine to the project site is the Tulare Lake Drainage District, approximately 6 miles southeast. Given this distance, the proposed project would not interfere with nearby mine sites and would not result in the loss of land designated for mineral resources. Furthermore, based on the absence of historical surface mining in the immediate area, the potential for surface mining at the project site is considered extremely low. Thus, the project would not result in the loss of availability of a known mineral resource and the potential impact to future mineral resources is less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated to result in the loss of availability of a known mineral resource, or otherwise impede access to a known mineral resource.

Mitigation Measures

- MM 4.12-1:** Prior to issuance of any grading or building permit, excluding the generation tie line, the project proponent shall provide the following documentation regarding the mineral rights holders who also have right of surface access and drilling areas:
- a. A site plan showing the unbuildable drilling areas provided for the mineral holders with clear notation that no use of the area can be made for the life of the project except for exploration and extraction of oil and gas with permits without purchase and

ownership of full mineral rights. No construction storage or laydown area may be established at any time in the drilling areas unless permitted through an individual agreement. All drilling areas shall be fenced and provided legal access across the site, and a 40-foot-long gate provided or as detailed by the individual agreement including a provision to not fence the drill island; or

- b. For all mineral rights holders that do not have an individual agreement and have right of surface access, a drilling area sufficient to provide access to their minerals shall be shown on the final site plan and acknowledged in all grading plans.

Level of Significance

With implementation of Mitigation Measure MM 4.12-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.12-2: The project would result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

The project site is not located on a locally important mineral resource recovery site delineated by the Kern County General Plan. While there are nearby mineral resource recovery sites, the operation of such sites would not be impeded by the development of the proposed project. Therefore, loss of availability of mineral resources impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated to result in the loss of availability of a known mineral resource delineated on an adopted land use plan..

Mitigation Measures

Implementation of Mitigation Measure MM 4.12-1 would be required.

Level of Significance

With implementation of Mitigation Measure MM 4.12-1, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, there are 3 cumulative projects, as shown in **Table 3-4: Cumulative Projects List**. The geographic scope of impacts associated with mineral resources generally encompasses the project site and a 0.25-mile-radius area around the project site. This scope is appropriate because of the localized nature of mineral resource impacts. There are no cumulative projects located within this range. Furthermore, there are no MRZs or lands designated as Mineral and Petroleum

areas by the Kern County General Plan within a 0.25-mile-radius area around the project site. Therefore, the proposed project, in conjunction with other related projects, would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site and would not contribute to any cumulative impacts to mineral resources.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements to the existing Arco Substation for the transport of renewable energy is not anticipated to result in the cumulative loss of availability of a known mineral resource by impeding access to that resource or by conflicting with an adopted land use plan.

Mitigation Measures

Implementation of Mitigation Measure MM 4.12-1 would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Section 4.13 Noise

4.13.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for the proposed project and provides an analysis of potential impacts related to noise and groundborne vibration from project implementation. Additionally, mitigation measures to reduce potential noise and vibration impacts are identified, where necessary. The information and analysis in this section is largely based on the *Azalea Solar Project Noise Study* prepared by Surf to Snow Environmental Resource Management (S2S) located in Appendix L of this EIR (S2S Environmental Resource Management, 2021).

Noise Fundamentals

An understanding of the physical characteristics of sound is useful for evaluating environmental noise. The methods and metrics used to quantify noise exposure, human response, and relative judgment of loudness are also discussed, and noise levels of common noise environments are presented.

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:

- Subjective effects (dissatisfaction, annoyance);
- Interference effects (communication and sleep interference, learning);
- Physiological effects (startle response); and
- Physical effects (hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical (i.e., to the body itself) and physiological (i.e., to body functions) effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. The subjective responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, and telephone conversations, and interference with sleep. Sleep interference effects can include both awakening from sleep and arousal to a lesser state of sleep.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and amplitude. Frequency describes the sound's pitch (tone) and is measured in cycles per second (Hertz [Hz]), while amplitude describes the sound's pressure (loudness). Because the range of sound pressures that occurs in the environment is extremely large, it is convenient to express these pressures on a logarithmic scale that compresses the wide range of pressures into a more useful range of numbers. The standard unit

of sound measurement is the decibel (dB). Hz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a given number of times per second. If the drum vibrates 100 times per second, it generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the healthy human ear.

Sound levels are expressed by reference to a specified national/international standard. The sound pressure level is used to describe sound pressure (loudness) and is specified at a given distance or specific receptor location. In expressing sound pressure level on a logarithmic scale, sound pressure (dB) is referenced to a value of 20 micropascals (μPa). Sound pressure level depends not only on the power of the source but also on the distance from the source to the receiver and the acoustical characteristics of the sound propagation path (absorption, reflection, etc.).

Outdoor sound levels decrease logarithmically as the distance from the source increases. This decrease is due to wave divergence, atmospheric absorption, and ground attenuation. Sound radiating from a source in a homogeneous and undisturbed manner travels in spherical waves. As the sound waves travel away from the source, the sound energy is dispersed over a greater area, decreasing the sound pressure of the wave. Spherical spreading of the sound wave from a point source reduces the noise level at a rate of 6 dB per doubling of distance.

Atmospheric absorption also influences the sound levels received by an observer. The greater the distance traveled, the greater the influence of the atmosphere and the resultant fluctuations. Atmospheric absorption becomes important at distances greater than 1,000 feet. The degree of absorption varies depending on the frequency of the sound as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest (i.e., sound carries farther) at high humidity and high temperatures, and lower frequencies are less readily absorbed (i.e., sound carries farther) than higher frequencies. Over long distances, lower frequencies become dominant as the higher frequencies are more rapidly attenuated. Turbulence, gradients of wind, and other atmospheric phenomena also play a significant role in determining the degree of attenuation. For example, certain conditions, such as temperature inversions, can channel or focus the sound waves, resulting in higher noise levels than would result from simple spherical spreading.

Sound from a tuning fork contains a single frequency (a pure tone), but most sounds in the environment do not consist of a single frequency. Instead, they are a broad band of many frequencies differing in sound level. Because of the broad range of audible frequencies, methods have been developed to quantify these values into a single number representative of human hearing. The most common method used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that is reflective of human hearing characteristics. Human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This process is termed “A weighting,” and the resulting dB level is termed the “A-weighted” decibel (dBA).

Because A-weighting is designed to emulate the frequency response characteristics of the human ear and reflect the way people perceive sounds, it is widely used in local noise ordinances and State and federal guidelines, including those of the State of California and Kern County. Unless specifically noted, the use of A-weighting is always assumed with respect to environmental sound and community noise, even if the notation does not include the “A.”

In terms of human perception, a sound level of 0 dBA is the threshold of human hearing and is barely audible by a healthy ear under extremely quiet listening conditions. This threshold is the reference level

against which the amplitude of other sounds is compared. Normal speech has a sound level of 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort, progressing to pain at still higher levels. Humans are much better at discerning relative sound levels than absolute sound levels. The minimum change in the sound level of individual events that an average human ear can detect is about 1 to 3 dBA. A 3 to 5 dBA change is readily perceived. An increase (or decrease) in sound level of about 10 dBA is usually perceived by the average person as a doubling (or halving) of the sound's loudness.

Because of the logarithmic nature of the decibel, sound levels cannot be added or subtracted directly. However, some simple rules are useful in dealing with sound levels. First, if a sound's acoustical energy is doubled, the sound level increases by 3 dBA, regardless of the initial sound level (e.g., 60 dBA + 60 dB = 63 dBA; 80 dBA + 80 dBA = 83 dBA). However, an increase of 10 dBA is required to double the perceived loudness of a sound, and a doubling or halving of the acoustical energy (a 3 dBA difference) is at the lower limit of readily perceived change.

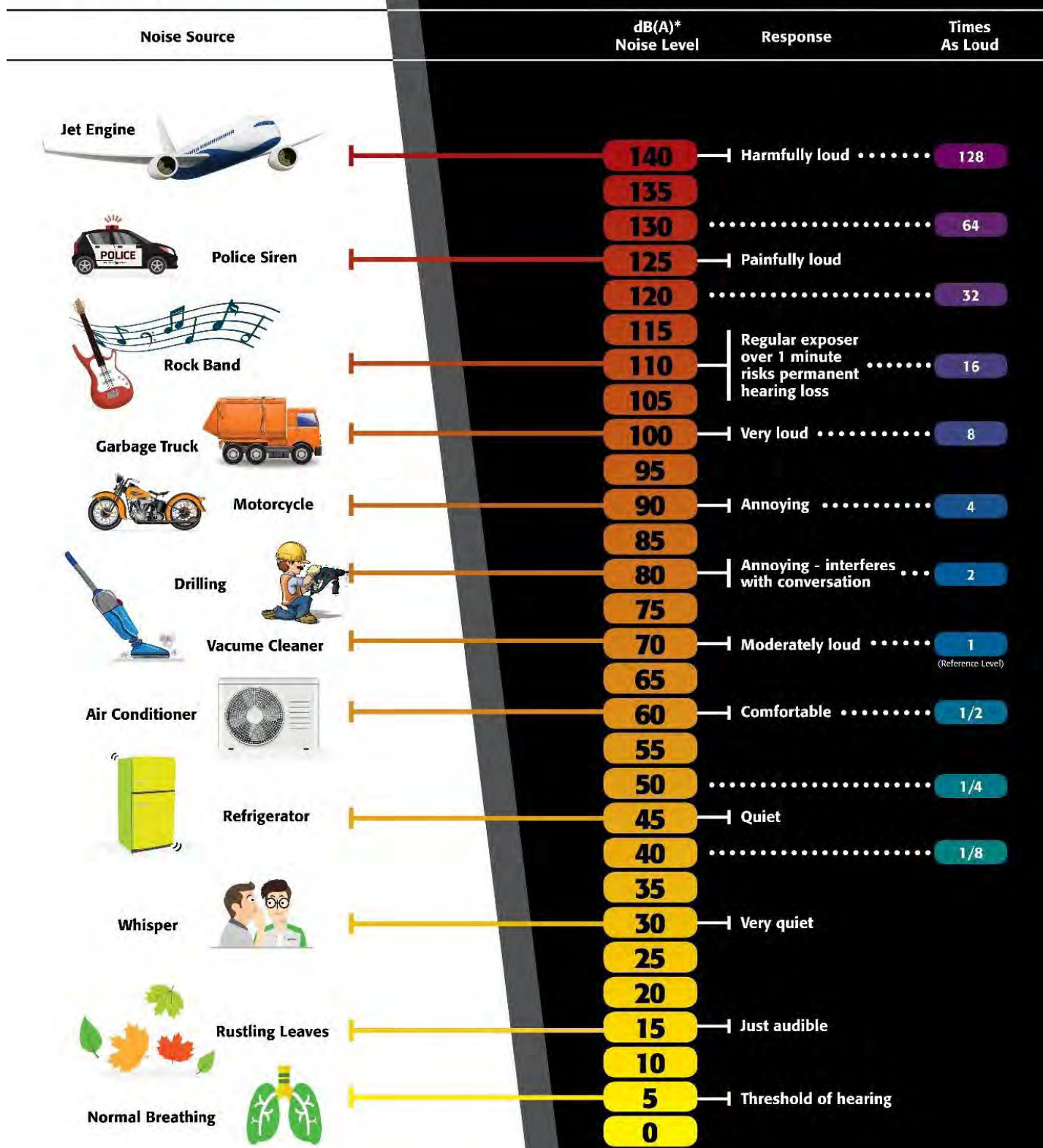
Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most ambient environmental noise includes a mixture of noise from nearby and distant sources that creates an ebb and flow of sound, including some identifiable sources plus a relatively steady background noise in which no particular source is identifiable. A single descriptor, termed the equivalent sound level (L_{eq}), is used to describe sound that is constant or changing in level. L_{eq} is the energy-mean dBA during a measured time interval. It is the "equivalent" sound level produced by a given constant source equal to the acoustic energy contained in the fluctuating sound level measured during the interval. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum instantaneous (L_{max}) and minimum instantaneous (L_{min}) noise level indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{10} , L_{50} , and L_{90} may be used, which represent the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with L_{10} typically describe transient or short-term events, L_{50} represents the median sound level during the measurement interval, and L_{90} levels are typically used to describe background noise conditions.

The Day-Night Average Sound Level (L_{dn} or DNL) represents the average sound level for a 24-hour day and is calculated by adding a 10 dBA penalty to sound levels during the night period (10:00 p.m. to 7:00 a.m.). The L_{dn} is the descriptor of choice and used by nearly all federal, State, and local agencies throughout the United States to define acceptable land use compatibility with respect to noise. Within California, the Community Noise Equivalent Level (CNEL) is sometimes used. CNEL is very similar to L_{dn} , except that an additional 5 dBA penalty is applied to the evening hours (7:00 p.m. to 10:00 p.m.). Because of the time-of-day penalties associated with the L_{dn} and CNEL descriptors, the L_{dn} or CNEL dBA value for a continuously operating sound source during a 24-hour period will be numerically greater than the dBA value of the 24-hour L_{eq} . Thus, for a continuously operating noise source producing a constant noise level operating for periods of 24 hours or more, the L_{dn} will be 6 dBA higher than the 24-hour L_{eq} value.

To provide a frame of reference, common sound levels are presented in **Figure 4.13-1: Effects of Noise on People**, below, and a summary of common noise metrics is provided in **Table 4.13-1: Common Noise Metrics**, on the following page.

Common Environmental Noise Levels



* Typical A-weighted sound levels in decibels.
 "A" weighting approximates the frequency response of the human ear.

Source: Kimley-Horn, 2022

FIGURE 4.13-1: Effects of Noise on People

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Not to scale

TABLE 4.13-1: COMMON NOISE METRICS

Unit of Measure		Description
dB	Decibel	Decibels, which are units for measuring the volume of sound, are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 dB sounds are 10 times more intense than 1 dB sounds, and 20 dB sounds are 100 times more intense. A 10 dB increase in sound level is perceived by the human ear as a doubling of the loudness of the sound.
dBA	A-Weighted Decibel	A sound pressure level that has been weighted to quantitatively reduce the effect of high- and low-frequency noise. It was designed to approximate the response of the human ear to sound.
CNEL	Community Noise Equivalent Level	A metric representing the 24-hour average sound level that includes a 5 dBA penalty during relaxation hours (7:00 p.m. to 10:00 p.m.) and a 10 dBA penalty for sleeping hours (10:00 p.m. to 7:00 a.m.).
L _{dn}	Day-Night Average Noise	The 24-hour average sound level, expressed in a single decibel rating, for the period from midnight to midnight obtained after the addition of a 10 dBA penalty to sound levels for the periods between 10:00 p.m. and 7:00 a.m.
L _{eq}	Equivalent Noise Level	The average acoustic energy content of noise for a stated period of time. The L _{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L _{eq} may also be referred to as the average sound level.
L _{max}	Maximum Noise Level	L _{max} represents the maximum instantaneous noise level experienced during a given period of time. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise.
L _{min}	Minimum Noise Level	L _{min} represents the minimum instantaneous noise level experienced during a given period of time. It reflects baseline operating conditions and is commonly referenced as the noise floor.
L ₁ , L ₁₀ , L ₅₀ , L ₉₀	Percentile Noise Exceedance Levels	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period.

Vibration Fundamentals

As described in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA, 2018), groundborne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV), measured in inches per second (in/sec), is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe structural vibration impacts to buildings. The root mean square (RMS) amplitude, measured in decibel notation (VdB), is defined as the average of the squared amplitude of the signal, which is most frequently used to describe human annoyance impacts.

Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the “crest factor,” defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity therefore, the decibel notation acts to compress the range of numbers required to describe vibration (FTA, 2018). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of groundborne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Human annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. However, a vibration level that causes annoyance will be well below the damage thresholds for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 in/sec PPV, while the standard for even the most sensitive and fragile structures is 0.12 in/sec PPV (FTA, 2018).

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible for many people (FTA, 2018).

4.13.2 Environmental Setting

Project Location

The proposed project is located in northwest Kern County, located approximately 2.5 miles northeast of Twisselman Road and Kings Road, approximately 16 miles south of Kettleman City, approximately 14 miles northwest of the community of Lost Hills, approximately 6 miles west of Interstate 5, and approximately 4 miles east of State Route 3. The proposed project is located in the northwestern portion of the Kern County Valley Region.

The project site is made up of two (2) privately owned parcels (Assessor Parcel Numbers (APNs): 043-210-17 and 043-210-18) totaling approximately 640 acres of largely undeveloped land. Please see **Figure 3-3: Existing Parcel Map**, in Chapter 3.0 – Project Description. The total study area for this project is larger than the area that will be subjected to entitlements, as it includes gen tie lines and access roads across private land. Primary access to the project site would be via an existing dirt access road along the Kern County/Kings County boundary. The existing road intersects with King Road/25 Avenue approximately one mile north of the proposed solar installation. This portion of roadway would be improved in a westerly direction from King Road/25 Avenue within Kern County jurisdiction. These improvements would be approximately 0.8 miles in length. At this end of the 0.8 miles, the roadway improvement would be continued in a southerly direction entirely within Kern County. The balance of the roadway, other improvements, and the solar facility itself would occur entirely within Kern County. Please see **Figure 3-4: Aerial Photograph** in Chapter 3.0 – Project Description.

The project site consists of two gently sloping, vacant, and undeveloped parcels of land covered with sparse to moderately dense non-native vegetation currently used for grazing. Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access roadways, a canal and a nut processing plant. Rural residential uses and other solar development are located to the south of the project site. The nearest sensitive receptor is located approximately 0.67 miles northeast of the project site boundary.

Existing Noise Environment

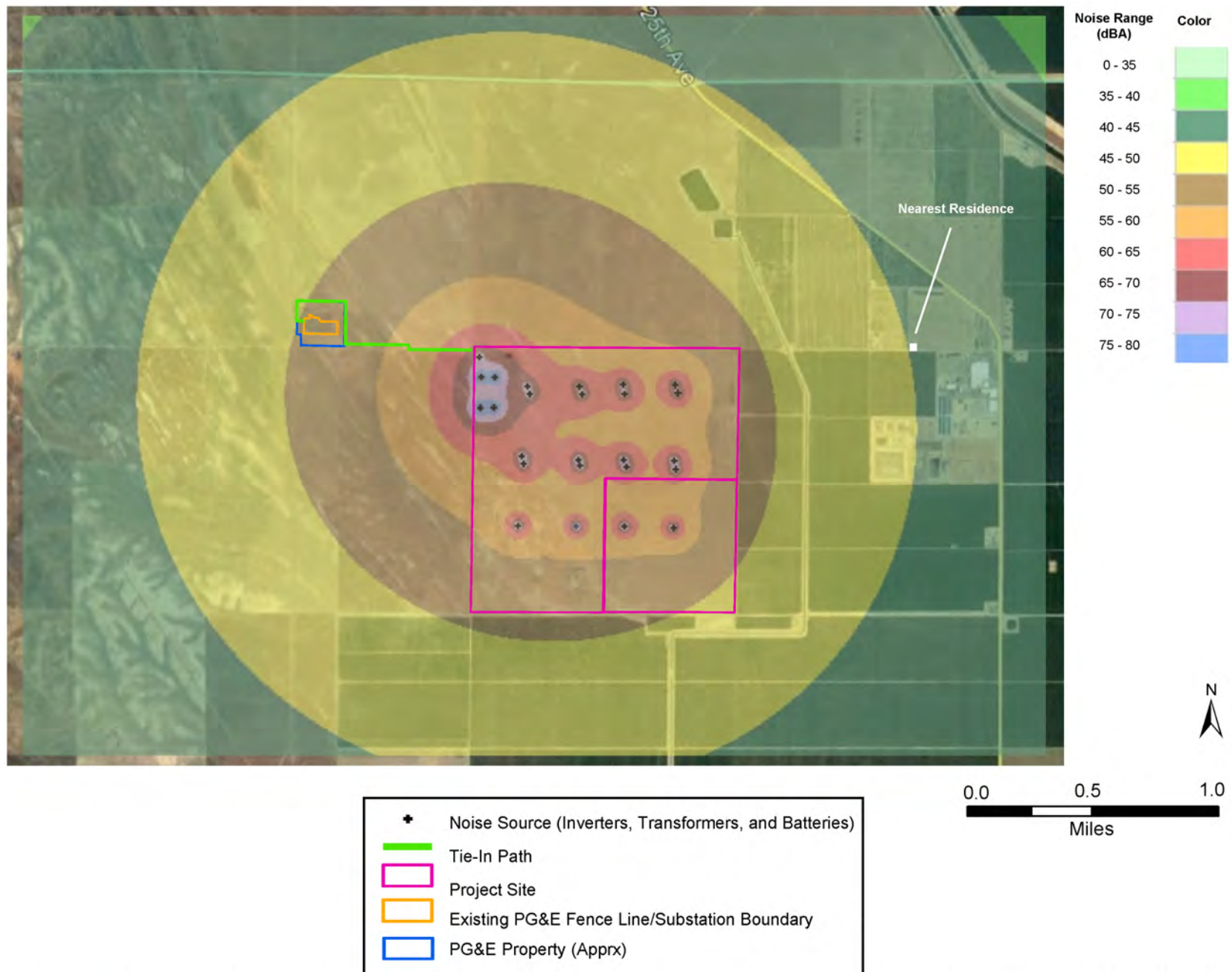
Ambient Noise levels is the composite of noise from all sources near and far. The normal or existing level of environmental noise or sound at a given location, and is typically defined by the energy average equivalent noise level (Leq).

Existing ambient noise levels within the project vicinity are dominated by traffic noise along adjacent roadways and noise associated with agricultural activities. Additional sources of noise may include those associated with birds; high- altitude aircraft overflights; heating, ventilation, and air conditioning (HVAC) systems; and barking dogs.

Identified by S2S Environmental Resource Management, the existing ambient sound levels in the project area are typical of rural environments and can be assumed to range from 35 to 45 dBA Ldn. Depending on location and time of day, both the frequency and magnitude of environmental noise may vary. This is due to weather, seasonal changes, vegetation cover, human activities, etc.

Noise-Sensitive Receptors

Land uses deemed sensitive by the State of California include schools, hospitals, rest homes, and long-term care and mental care facilities, which are considered to be more sensitive to ambient noise levels than others. Many jurisdictions also consider residential uses particularly noise-sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some jurisdictions may also identify other noise-sensitive uses such as churches, libraries, and parks. Furthermore, sensitive noise receptors may also include threatened or endangered biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Land uses that are generally not considered to be noise sensitive receptors include office, commercial, and retail developments. There was one identified noise sensitive receptor located approximately 0.67 miles northeast of the project site boundary. **Figure 4.13-2: Noise-Contours**, shows project location and surrounding areas in relation to the dBA range and noise contours, as well as the location of the sensitive receptor.



SOURCE: Surf to Snow, 2022

FIGURE 4.13-2: Noise Contours
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Azalea Solar Project



Not to scale

4.13.3 Regulatory Setting

Federal

Noise Control Act of 1972

The Noise Control Act of 1972 (42 USC 4910) establishes a national policy to promote an environment for all Americans to be free from noise that jeopardizes their health and welfare. The Act establishes a means for the coordination of federal research and activities in noise control, authorizes the establishment of federal noise emissions standards for products distributed in commerce, and provides the noise-emission and noise-reduction characteristics of such products to the public.

United States Environmental Protection Agency, Environmental Noise Levels

The United States Environmental Protection Agency (USEPA) provided guidance on environmental noise levels in Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety (USEPA, 1974), commonly referenced as the “Levels Document,” that establishes an L_{dn} of 55 dBA, as the requisite level, with an adequate margin of safety, for areas of outdoor uses, including residences and recreation areas. The Levels Document does not constitute USEPA regulations or standards, but identifies safe levels of environmental noise exposure without consideration of technical or economic feasibility for achieving these levels or other potentially relevant considerations.

Federal Energy Regulatory Commission, Noise Guidelines

Federal Energy Regulatory Commission (FERC) *Noise Guidelines on Noise Emissions from Compressor Stations, Substations, and Transmission Lines* (18 CFR 157.206(d)5), require that the noise attributable to any new compressor stations, compression added to an existing station, or any modification, upgrade, or update of an existing station must not exceed a L_{dn} of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences). This policy was adopted based on the USEPA-identified level of significance of 55 dBA L_{dn} .

Federal Highway Administration Noise Abatement Procedures (23 CFR Part 772)

The purpose of 23 CFR Part 772 is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, supply noise abatement criteria, and establish requirements for information to be given to local officials for use in the planning and design of highways. It establishes five categories of noise-sensitive receptors and prescribes the use of the hourly L_{eq} as the criterion metric for evaluating traffic noise impacts.

Department of Housing and Urban Development, Environmental Standards

The Department of Housing and Urban Development (HUD) regulations (24 CFR Part 51) set forth the following exterior noise standards for new home construction, assisted or supported by HUD:

- 65 L_{dn} or less – Acceptable
- > 65 L_{dn} and < 75 L_{dn} – Normally unacceptable, appropriate sound attenuation measures must be provided
- > 75 L_{dn} – Unacceptable

HUD's regulations do not contain standards for interior noise levels. Rather, a goal of 45 dBA L_{dn} is set forth, and attenuation requirements are geared to achieve that goal.

Occupational Safety and Health Administration, Occupational Noise Exposure

Occupational Safety and Health Administration (OSHA), *Occupational Noise Exposure; Hearing Conservation* Amendment (Federal Register 48 [46], 9738–9785, 1983) stipulates that protection against the effects of noise exposure shall be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to within acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, a Hearing Conservation Program must be instituted by the employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA $L_{eq(8)}$. The Hearing Conservation Program requirements consist of periodic area and personal noise monitoring, performance and evaluation of audiograms, provision of hearing protection, annual employee training, and record keeping.

State

The State requires all municipalities to prepare and adopt a comprehensive long-range general plan. General plans must contain a noise element (California Government Code Section 65302(f) and Section 46050.1 of the Health Safety Code). The requirements for the noise element of the general plan include describing the noise environment quantitatively using a cumulative noise metric such as CNEL or DNL, establishing noise/land use compatibility criteria, and establishing programs for achieving and/or maintaining land use compatibility. Noise elements should address all major noise sources in the community, including mobile and stationary noise sources. In California, most cities and counties have also adopted noise ordinances which serve as enforcement mechanisms for controlling noise.

The California Department of Health Services has studied the correlation of noise levels and their effects on various land uses and established guidelines for evaluating the compatibility of various land uses, for the noise elements of local general plans, as a function of community noise exposure. The guidelines are the basis for most noise element land use compatibility guidelines in California.

The land use compatibility for community noise environment chart identifies the normally acceptable range for several different land uses, as shown in **Figure 4.13-3: Land Use Compatibility for Community Noise Environment**. Persons in low-density residential settings are most sensitive to noise intrusion, with noise

FIGURE 4.13-3: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

Land Use Category			Community Noise Exposure – L _{dn} or CNEL (dBA)													
			50		55		60		65		70		75		80	
Residential – Low Density Single Family, Duplex, Mobile Home																
Residential – Multi-Family																
Transient Lodging – Motel/Hotel																
Schools, Libraries, Churches, Hospitals, Nursing Homes																
Auditorium, Concert Hall, Amphitheaters																
Sports Arena, Outdoor Spectator Sports																
Playgrounds, Neighborhood Parks																
Golf Courses, Riding Stables, Water Recreation, Cemeteries																
Office Buildings, Business, Commercial and Professional																
Industrial, Manufacturing, Utilities, Agriculture																
	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements														
	Conditionally Acceptable	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.														
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.														
	Clearly Unacceptable	New construction or development generally should not be undertaken.														

SOURCE: State of California, Governor's Office of Planning and Research, 2003.

levels of 60 dBA CNEL and below are considered “acceptable.” For land uses such as schools, libraries, churches, hospitals, and parks, acceptable noise levels are up to 70 dBA CNEL. *CEQA Guidelines* (PRC Section 21000 et seq.) requires the identification of “significant” environmental impacts and their feasible mitigation. Section XI of *CEQA Guidelines* Appendix G (CCR Title 14, Appendix G) lists some indicators of potentially significant impacts, which are included below under the heading “Thresholds of Significance.”

The State also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dBA at 15 meters. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by State and local law enforcement officials.

Local

Kern County General Plan

The Noise Element of the Kern County General Plan (County of Kern, 2009) provides goals, policies, and implementation measures applicable to noise, which, as related to the project, are provided below. The major purpose of the County’s Noise Element is to establish reasonable standards for maximum noise levels desired in Kern County, and to develop an implementation program which could effectively mitigate potential noise problems and not subject residential or other sensitive noise land uses to exterior noise levels in excess of 65 dBA L_{dn} , and interior noise levels in excess of 45 dBA L_{dn} .

In accordance with the Energy Element, Policy 10, of the General Plan, the County may also require the preparation of an acoustical analysis for energy project proposals that might impact sensitive and highly- sensitive uses. Applicable goals, policies, and implementation measures from the County’s General Plan that are relevant to the proposed project are summarized below.

Chapter 3. Noise Element

3.3 Sensitive Noise Areas

Goals

- Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.
- Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

- Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses,

- Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise,
- Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions,
- Policy 7: Employ the best available methods of noise control.

Implementation Measures

- Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.
- Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.
- Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise-sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn} .
- Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
- Be the responsibility of the applicant.
 - Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
 - Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.
- Measure I: Noise analyses shall include recommended mitigation, if required, and shall:
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
 - Include estimated noise levels, in terms of CNEL, for existing and projected future (10–20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
 - Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
 - Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.
- Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

Chapter 5. Energy Element

Policies

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

Kern County Code of Ordinances

The Kern County Code of Ordinances, Chapter 8.36 (Noise Control), includes acceptable hours of construction, and limitations on construction related noise impacts on adjacent sensitive receptors.

Chapter 8.36 of the Kern County Code of Ordinances (Kern County, 2007) also addresses noise issues, including acceptable hours of construction, and limitations on construction-related noise impacts on adjacent sensitive receptors. Noise producing construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling, are prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and 9:00 p.m. to 8:00 a.m. on weekends. However, the following exceptions are permitted:

1. The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.
2. Emergency work is exempt from this section.

Groundborne Vibration

There are currently no federal, State, or local regulatory standards for groundborne vibration. However, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. While the proposed project would not be subject to Caltrans oversight, guidance by the agency nonetheless provides groundborne vibration criteria that are useful in establishing thresholds of impact. Caltrans' threshold criteria pertaining to building damage and human annoyance for continuous and transient events are summarized in **Table 4.13-3: Vibration Criteria for Structural Damage**, and **Table 4.13-4: Vibration Criteria for Human Annoyance**, respectively below.

As indicated in **Table 4.13-4: Vibration Criteria for Structural Damage**, the structural damage threshold, at which there is a risk to normal structures from continuous or frequent vibration sources, is 0.3 in/sec PPV for older residential structures and 0.5 in/sec PPV for newer building construction. The 0.5 in/sec PPV threshold also represents the structural damage threshold applied to older structures for transient vibration sources. With regard to human perception (refer to **Table 4.13-5**), vibration levels would begin to become distinctly perceptible at levels of 0.04 in/sec PPV for continuous or frequent vibration sources and 0.25 in/sec PPV for transient vibration sources. Continuous vibration levels are considered annoying for people in buildings at levels of 0.2 in/sec PPV.

TABLE 4.13-3: VIBRATION CRITERIA FOR STRUCTURAL DAMAGE

Structure and Condition	Vibration Level (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
Newer residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
NOTES: Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous. in/sec ppv = inches per second peak particle velocity		
SOURCE: Caltrans, 2020.		

TABLE 4.13-4: VIBRATION CRITERIA FOR HUMAN ANNOYANCE

Human Response	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Annoying to people in buildings	—	0.2
Severe	2.0	0.4
NOTES: Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous. in/sec ppv = inches per second peak particle velocity		
— = not available.		
SOURCE: Caltrans, 2020.		

4.13.4 Impacts and Mitigation Measures

Methodology

Noise impacts associated with the proposed project were assessed in this section based primarily on the *Azalea Solar Noise Study* (Appendix L). Potential significant impacts associated with the project were evaluated on a quantitative and qualitative basis through a review of existing literature and available information, and by using professional judgment in comparing the anticipated proposed project effects on noise with existing conditions. The evaluation of proposed project impacts is based on significance criteria established by Appendix G of the *CEQA Guidelines*, which the Lead Agency has determined to be appropriate criteria for this draft EIR.

The project was evaluated for the potential to cause noise impacts based on the construction activities that would be needed to build the projects. Noise generated from construction is anticipated to be typical of other solar power facilities in terms equipment used and other types of activities performed. Construction would not require any demolition, so noise generated from such activities were omitted. Noise from construction was based on an anticipated 12 month construction schedule beginning in late 2022 to 2023. Project construction was evaluated based on the typical five phases of construction for such projects. This includes 1) demolition (not applicable for this project), 2) site preparation, and excavation; 3) concrete pouring; steel erection; 4) mechanical; and 5) clean-up. The evaluation of noise also considers transportation of materials to and from the site, and construction worker traffic during commute hours.

Groundborne vibration levels associated with construction-related activities were evaluated utilizing typical groundborne vibration levels rates associated with construction equipment, obtained from the FTA's Transit Noise and Vibration Impact Assessment Manual (FTA, 2018). Groundborne vibration impacts related to structural damage and human annoyance were evaluated taking into account the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant noise-related adverse effect.

A project could have a significant noise-related adverse effect if it would result in:

- a. Generation of a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies;
- b. Generation of excessive groundborne vibration or groundborne noise levels;
- c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- d. For a project located within the Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels.

Substantial Temporary or Permanent Ambient Noise Increase in Excess of Standards

Kern County regulates noise levels per the requirements of Chapter 8.36 (Noise Control) of the Kern County Code of Ordinances, which establishes hours of construction and limitations on construction-related noise impacts on adjacent sensitive receptors. Specifically, construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling, are prohibited between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends. However, as previously stipulated, the following exceptions are permitted: (1) The development services agency director or his designated representative may for good cause exempt some construction work for a limited time, and (2) Emergency work is exempt from this section. Given that a 5 dBA change in the community noise environment is considered to be readily perceptible by the human ear, construction activities occurring outside of the acceptable construction hours

established by the County that increases the ambient noise levels at a noise-sensitive land use by 5 dBA or more is considered to be a violation of the County's construction noise regulations.

For operational noise, the Kern County General Plan Noise Element requires that proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise-sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn}. Operational noise impacts from stationary equipment are assessed by determining if the proposed project would result in a substantial increase in ambient noise levels that would exceed the applicable County noise standards at the outdoor activity area of the nearest noise-sensitive land use.

Generation of Excessive Groundborne Vibration

For the purposes of assessing potential groundborne vibration impacts associated with the proposed project, Caltrans's vibration criteria for potential structural damage risks and human annoyance was used in this analysis. Accordingly, groundborne vibration levels would be considered significant if predicted short-term construction or long-term operational groundborne vibration levels attributable to the proposed project would exceed the recommended criteria for structural damage or human annoyance (i.e., 0.25 and 0.1 in/sec PPV, respectively) at the nearest off-site existing structure (refer to **Table 4.13-4** and **Table 4.13-5**). These thresholds are considered to represent a conservative level at which construction-related activities would result in either structural damage or human annoyance. The proposed project would not result in the use of equipment or processes that would result in long-term or permanent increases in groundborne vibration.

Project Impacts

Impact 4.13-1: The project would result in generation of a substantial temporary or permanent increase in the 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.

The closest noise-sensitive receptors in proximity to the project site is one residence located approximately 3,600 feet (0.67 miles) east of the project site. There are no other sensitive noise receptors, such as schools, hospitals, rest homes, long-term care and mental care facilities, churches, libraries, and parks, found within the boundaries of the project site.

Construction Activities

During project construction, the rural residence located nearest to the project site would be exposed to vehicle traffic noise associated with project-related construction traffic on local roadways. Traffic noise from daily trips by construction workers commuting to the site would contribute to the traffic noise levels along access routes. Construction-generated vehicle traffic would include a mix of light-duty automobiles and trucks and heavy-duty trucks. However, to result in a perceptible increase (3 dBA or greater) in the resulting traffic noise level, a doubling of the noise source (i.e., doubling vehicle traffic volumes) would be required. The minimum current volume on roads that may be affected by construction is 870 ADT (Stantec, 2021). The increased traffic levels during peak construction would not double the ADT for any roads used on the project, and therefore would not lead to a perceptible increase in traffic noise. (S2S Environmental

Resource Management, 2021). Thus, noise impacts associated with increases in construction-generated vehicle traffic noise would be less than significant.

Project construction activities would include site preparation and clearing/grading, underground work (trenching), collection system installation, foundations, PV system installation, testing, and site cleanup/restoration work. Most of the construction activities associated with the proposed project would be intermittent and sporadic and occur in defined construction areas with noise emanating from various points rather than occurring over the entire Facility simultaneously. Typically, construction activities occur in small construction areas with noise emanating from the various points within. Noise levels would be attenuated by distance as construction activities move further away from receptors.

Project construction would generate noise during the operation of heavy-duty construction equipment, such as a crane, excavator, grader, roller, scraper, tractor/loader/backhoe, and trencher. Typical equipment and composite noise levels generated by the loudest construction equipment in each construction phase are summarized in **Table 4.13-5: Estimated Construction Equipment Noise Levels**. In addition, **Table 4.13-6: Average Construction Noise Levels at Various Distances**, shows the anticipated noise levels that would be experienced at distances of 375 feet, 1,500 feet, and 3,000 feet from the sources.

TABLE 4.13-5: ESTIMATED CONSTRUCTION EQUIPMENT NOISE LEVELS

Average Noise Levels (dBA) at 50 Feet ^a		
Type of Equipment	Equipment Noise Level	Composite Noise Level
Demolition, Site Clearing, and Excavation		
Dump Truck	91	89
Backhoe	85	
Steel Erection		
Derrick Crane	88	88
Jack Hammer	88	
Mechanical		
Derrick Crane	88	87
Pneumatic Tools	86	
SOURCE: EPA, 1971; Barnes et al., 1976.		

TABLE 4.13-6: AVERAGE CONSTRUCTION NOISE LEVELS AT VARIOUS DISTANCES

Construction Phase	Noise Level (dBA)		
	At 375 feet	At 1,500 feet	At 3,000 feet
Demolition, Site Clearing, and Excavation	71	59	53
Concrete Pouring	60	48	42
Steel Erection	88	57	51
SOURCE: S2S Environmental Resource Management, 2021			

As shown in **Table 4.13-5: Estimated Construction Equipment Noise Levels**, at a reference distance of 50 feet, project construction equipment would generate maximum and hourly average noise levels ranging from approximately 91 dBA to 85 dBA. **Table 4.13-6: Average Construction Noise Levels at Various Distances**, shows the anticipated noise level that would be experienced during construction at the listed distances. Based on these values and with the closest sensitive receptor being around 3,500 ft away, the project would not exceed any threshold specified above.

As identified above, the Kern County Noise Control Ordinance limits construction hours of the day for noise-generating construction activities that are audible at 150 feet from the construction site, or that occur within 1,000 feet of an occupied residential dwelling. In such instances and with the exception of emergency work or County-approved work, construction activities would be prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and between 9:00 p.m. to 8:00 a.m. on weekends. However, as previously stipulated, the following exceptions are permitted: (1) The development services agency director or his designated representative may for good cause exempt some construction work for a limited time, and (2) Emergency work is exempt from this section. These construction hour limitations would apply to the proposed project, and compliance with these hourly restrictions would substantially decrease levels of annoyance and potential sleep disruption to occupants of the nearest residential dwellings.

To further ensure noise levels do not exceed thresholds, the proposed project would include noise reduction measures in MM 4.13-1 and MM 4.13-2. These measures would limit and/or reduce potential construction noise during construction, as well as providing notice to residents of construction activities and a contact number for noise complaints. Because construction of the proposed project would comply with the hourly limitations identified in the County's noise-control ordinance, and because the nearest sensitive receptor is 0.67 miles away, impacts would be less than significant.

Operational Noise

Once construction has been completed, noise generated by project operations would mostly occur from the on-site operation of transformers, inverters, shared substations, and power conversion stations. Once fully operational, the proposed project would operate for seven days a week on a regular basis. Additionally, because the proposed project would employ fixed-tilt or tracker technology, and may include either horizontal single-axis tracker (HSAT) systems or dual-axis tracker (DAT) systems in order to orient the solar panels toward the sun, the operation of the electrical motors used to power the HSATs and/or DATs would generate intermittent noise levels. As low background noise levels exist, corona discharge (defined as the electrical breakdown of the air into charged particles, often resulting in audible noise) could also be potentially detectable in the proposed vicinity of the transmission lines, more so during high humidity conditions. Furthermore, additional operational noise sources would also include on-site vehicle operations and intermittent maintenance activities. Project operational noise sources would include ground-mounted PV system blocks, in which the design includes an optional axis tracker that would enable panels to rotate to follow the sun's path. Noise levels from similar PV systems are documented to range up to approximately 48 dBA at 40 feet. Operational noise sources would also include transformers and inverters. Single step-up, three-phase, pad-mounted, ventilated transformers can generate noise levels ranging up to approximately 85 dBA Leq at a reference distance of 1 meter (approximately 3.3 feet). Fan-cooled inverters can generate noise levels of up to approximately 79.4 dBA Leq at a reference distance of 1 meter (approximately 3.3 feet). The project may also include a battery system for electrical storage, which would be operationally silent, and the flywheel system would generate minimal noise. While the system to be used is unknown, if cooling fans are required by the battery system the approximate noise level is 74 dBA Leq

at 33 feet. Noise modeling for project's operational noise levels was performed and the operational sound level (in other words, noise attributable to the project) at the closest existing residence is predicted to be less than 45 dBA L_{eq} , equivalent to an L_{dn} of 51 dBA. This is less than the existing L_{dn} and less than the County Noise Ordinance standards of 65 dBA exterior (L_{dn}) and 45 dBA interior (L_{dn}). Project operations would therefore not result in any significant noise impacts and would not violate County noise ordinances or standards (S2S Environmental Resource Management, 2021). Operational noise would not significantly increase ambient noise levels in the project vicinity in excess of established standards, therefore impacts would be less than significant.

Project Decommissioning

At such time the Azalea Solar Project is decommissioned, equipment operation and site restoration activities would result in a temporary increase in ambient noise levels in the project area. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to the project construction activities. Similar to the construction noise analysis above, decommissioning of project would result in potentially increased noise levels compared to existing conditions. Therefore, it is recommended that noise reduction measures MM 4.13-1 through 4.13-3 be implemented during decommissioning activities to reduce temporary noise levels at off-site receptors.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated to result in a substantial temporary or permanent increase in ambient noise levels.

Mitigation Measures

To reduce and minimize construction noise levels, implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3 would be required.

MM 4.13-1: The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning:

- a. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and between 9:00 p.m. to 8:00 a.m. on weekends. These hourly limitations shall not apply to activities where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols.
- b. Equipment staging and laydown areas shall be located at the furthest practical distance from nearby residential land uses. To the extent possible, staging and laydown areas should be located at least 500 feet of existing residential dwellings.

- c. Construction equipment shall be fitted with noise-reduction features such as mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer.
- d. Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing).
- e. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).
- f. Back-up beepers for all construction equipment and vehicles shall be broadband sound alarms or adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not violated. On vehicles where back-up beepers are not available, alternative safety measures such as escorts and spotters shall be employed.

MM 4.13-2: Prior to the issuance of grading permits, a “noise disturbance coordinator” shall be established. The project proponent shall submit evidence of methods of implementation and shall continuously comply with the following during construction: The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved.

MM 4.13-3: Prior to the issuance of grading permits, the project proponent shall submit evidence of the following: Construction contracts shall specify that notices shall be sent out to all residences within 1,000 feet of the construction areas at least 15 days prior to commencement of construction. The notices shall include the construction's schedule and a telephone number where complaints can be registered with the noise disturbance coordinator. A sign legible at a distance of 50 feet shall also be posted at the construction site throughout construction, which includes the same details as the notices.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1, MM 4.13-2 and MM 4.13-3, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.13-2: The project would generate excessive groundborne vibration or groundborne noise levels.

In addition to noise, groundborne vibration and groundborne noise would be generated by project construction and operational activities. The proposed project would not involve the long-term operational use of any equipment or processes that would result in potentially significant levels of ground vibration. Construction activities that may result in groundborne vibration and/or groundborne noise (such as use of heavy equipment) would be temporary and only during daylight hours. Short-term construction activities associated with the proposed project may cause an increase in groundborne vibration levels, which decrease

rapidly with distance. FTA has published standard vibration velocities for construction equipment operations. Vibration levels typically associated with construction equipment are summarized in **Table 4.13-7: Representative Vibration Source Levels for Construction Equipment**.

TABLE 4.13-7: REPRESENTATIVE VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate Peak Particle Velocity at 25 Feet (inches/second)	Approximate Peak Particle Velocity at 50 Feet (inches/second)	Approximate Peak Particle Velocity at 100 Feet (inches/second)
Large bulldozer	0.089	0.031	0.011
Loaded trucks	0.076	0.027	0.010
Small bulldozer	0.003	0.001	0.000
Auger/drill rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory hammer	0.035	0.012	0.004
Vibratory compactor/roller	0.003	0.001	0.0004
Pile Driver (impact)	0.644	0.228	0.081

NOTES:

Calculated using the following formula:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

where:

PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance

PPV_{ref} = the reference vibration level in in/sec from **Table 12-2** of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*

D = the distance from the equipment to the receiver

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

As shown in **Table 4.13-7**, groundborne vibration levels generated by project construction equipment would range from 0.003 to 0.644 in/sec PPV at 25 feet from the source of activity. Vibration levels from post driving would be conservatively approximated by the pile driver category. Post driving would only occur during construction of the PV modules on-site; construction of the gen-tie line would not require the use of post drivers. Post drivers used during construction would be crawler or truck mounted, which generally result in less impact (i.e., lower vibration levels). At 25 feet, these values are below the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings and the 0.4 in/sec PPV human annoyance criteria, except for pile driving, which is below these thresholds at 100 feet. The nearest sensitive receptor is located at approximately 0.67 miles east, and therefore groundborne vibration or noise impacts from construction would be less than significant.

The operation of the Azalea Solar Facility would have O&M components that may generate vibration, such as HVAC systems from each ESS, maintenance vehicles, small-scale inverters, medium voltage transformers, and substation transformers. However, vibration from these operational sources would generally occur within 50 feet of the generating source due to the rapid attenuation of vibration over distance. The nearest sensitive receptor is located approximately 0.67 miles from the Facilities boundaries. Due to distance attenuation from these sources to the surrounding sensitive receptor, the vibration would be minimal. Therefore, groundborne vibration impacts resulting from project operation would be less than significant.

Decommissioning

At such time the Azalea Solar Facility is decommissioned, equipment operation and site restoration activities would create temporary vibration in the immediate vicinity. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to the project's construction activities. Therefore, decommissioning of the project would result in unnoticeable vibration levels at off-site receptors.

Therefore, groundborne vibration impacts resulting from project construction and operation would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated to result in a substantial temporary or permanent increase in groundbourne vibration levels..

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.13-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Once constructed, the proposed project would operate continuously, seven days per week. Noise generated by project operations would be predominantly associated with the on-site operation of transformers, inverters, and power conversion stations. Corona discharge may also be potentially detectable in the immediate vicinity of the proposed transmission lines, more often during high humidity conditions. Additional operational noise sources associated with the proposed project would include on-site vehicle operations and intermittent maintenance activities.

As discussed in Impact 4.13-1, the operation and maintenance activities associated with the solar facilities would result in less than significant noise impacts to surrounding sensitive receptors. The most impacted sensitive receptor during project operations would be a residence located approximately 3,600 feet (0.67 miles) east of the project site. As discussed above, noise levels from construction, operations, and decommissioning would not be substantial and would not exceed noise thresholds or result in substantial permanent increase in ambient noise volumes. Therefore, project operation would not cause the ambient noise level measured at the property line of affected uses to increase such that impacts would occur.

Operation of the project operations would require up to 5 full time equivalent (FTE) consisting of plant operators and maintenance technicians to manage and operate the solar facility. The FTE staff would

conduct routine visits for panel cleaning and repairs; panel washing could be done one or two times per year. Limited deliveries would be necessary for replacement PV modules and equipment during project operation. These activities are not expected to occur on a daily basis and would not generate a significant amount of traffic or create a substantial increase of vehicular noise in the area. Any increase in traffic would be minimal and sporadic; therefore, impacts from vehicular noise would be minimal.

Therefore, the project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, and impacts are less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated to result in a substantial permanent increase in ambient noise levels.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.13-4: The project is not located within the Kern County Airport Land Use Compatibility Plan and would not expose people residing or working in the area to excessive noise levels.

The nearest public airport to the project site is the Wasco-Kern County Airport located approximately 31 miles southeast of the project site. The project site is not located within any safety or noise zones for the Wasco-Kern County Airport. Due to the nature of the proposed land use, impacts from air traffic hazards or excessive aircraft noise are not anticipated to occur for people residing or working in the project area with respect to the project's proximity to an airport. Impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated to result exposure to excessive airport noise levels.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Section 3.9, *Cumulative Projects*, and listed in **Table 3-4: Cumulative Projects List**, there are a total of 3 projects located within the 6-mile cumulative radius of the project site, as shown on **Figure 3-10: Cumulative Projects**, in Chapter 3.0 Project Description, these projects are Chalan CA Solar Storage LLC, DBF Acquisition Co. LLC, and Wonderful Pistachios & Almonds Lost Hills Airstrip. Due to the localized nature of noise impacts, cumulative impacts would be largely limited to areas within the general vicinity (i.e., within approximately 1,000 feet per Chapter 8.36 of Kern County Code of Ordinances (County of Kern, 2010)) of the project site.

The proposed project's construction activities, in combination with the construction of other reasonably foreseeable projects in the area could result in increased short-term construction noise levels in the project area (depending upon the specific timing of the construction of those other projects and proximity to the project site). Construction activities associated with other projects in proximity to the project site could occur at the same time as the proposed project. Of the cumulative projects located within the 6-mile radius of the project site, there is one project located within 1 mile of the project site. Implementation of mitigation measures MM 4.13-1 through MM 4.13-3 would reduce and minimize construction noise levels; noise levels would be less than significant level on a project level basis.

The Kern County Code of Ordinances (Chapter 8.36 – Noise Control) establishes hours of construction and limitations on construction-related noise impacts on adjacent sensitive receptors; noise producing construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, if the construction site is within 1,000 feet of an occupied residential dwelling, are prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and 9:00 p.m. to 8:00 a.m. on weekends. Such noise producing construction activities occurring outside of these acceptable construction hours is considered to be a violation of the County's noise control ordinance. However, as previously stipulated, the following exceptions are permitted: (1) The development services agency director or his designated representative may for good cause exempt some construction work for a limited time, and (2) Emergency work is exempt from this section. Implementation of mitigation measures MM 4.13-1 through MM 4.13-3 would reduce and minimize construction noise levels and ensure the project's consistency with the County's noise control ordinance; noise levels would be less than significant on a project level basis. As a result, construction of the proposed project would not result in a cumulatively considerable contribution to noise impacts, as there are no residences located within approximately 1,000 feet of the project site. At receptor locations further than 1,000 feet from the project site, project-generated construction noise would diminish to near ambient levels and would not result in a cumulatively considerable contribution to construction noise levels associated with other construction projects. Therefore, when considered with other past, present, and reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to construction noise impacts.

The same receptor as identified for construction noise would be the closest to be impacted by all projects with respect to construction related vibration as well. Due to these distances, and the rapid attenuation of groundborne vibration, the project and the nearest related project are not in close enough proximity to this sensitive receptor such that any sensitive receptor would be exposed to substantial groundborne vibration levels. Construction of the collection lines, and decommissioning activities would result in similar noise and vibration levels identified for the construction of the proposed project. Therefore, cumulative impact in terms of groundborne vibration would be less than significant.

With respect to operational noise, as discussed for cumulative construction noise, there is one project located within 1 mile of the facility. As discussed under Impact 4.13-1, the maximum operational noise at the nearest receptor would be much lower than the County's 65 dBA L_{dn} exterior noise standard for residential use. The nearest cumulative project is located at a similar distance as the sensitive receptor, approximately 0.5 miles northeast of the proposed project boundary. As such, cumulative impacts associated with operational noise from the proposed project and cumulative projects are anticipated to be negligible at the nearest receptor and would not exceed Kern County Ordinance noise standards. Thus, cumulative operational noise impacts would be less than significant.

Cumulative operation could also result in the exposure of people to or the generation of excessive groundborne vibration. However, since operation of the proposed project and related projects would involve operational traffic, including O&M staff and regular maintenance truck (0.076 in/sec PPV), and panel washing activity (not measurable), project-related vibration impacts would not have any measurable effect on the adjacent off-site sensitive receivers. Therefore, cumulative vibrational impacts would be less than significant.

Overall, when considered with other past, present, and reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to noise impacts.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, for the transport of renewable energy is not anticipated to result exposure to excessive airport noise levels.. The PG&E Interconnection Facilities would not result in cumulative noise impacts.

Mitigation Measures

Implement Mitigation Measures MM 4.13-1 through MM 4.13-3 to reduce and minimize cumulative construction noise and vibration levels is required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3, cumulative impacts would be less than significant. Cumulative impacts would be less than significant for the PG&E Interconnection Facilities, and no mitigation would be required for the PG&E Interconnection Facilities.

Section 4.14 Public Services

4.14.1 Introduction

This section of the EIR describes the affected environment and regulatory setting pertaining to public services, which include fire and police protection. This section also addresses the potential impacts on public services that would result from implementation of the project and the mitigation measures to reduce these potential impacts. Information for this section was taken from numerous sources, including websites, and service agency plans.

4.14.2 Environmental Setting

Fire Protection

The Kern County Fire Department (KCFD) provides primary fire protection services, fire prevention, emergency medical, and rescue services to more than 500,000 people in unincorporated areas of Kern County and nine incorporated cities (i.e., the cities of Arvin, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco). KCFD operates 47 full-time fire stations within 7 battalions and is equipped with 58 fire engines, 6 ladder trucks, 54 patrol vehicles, 30 command vehicles, 6 dozers, 2 helicopters, 2 hazardous material response teams, and other ancillary vehicles and equipment. KCFD is staffed with 621 permanent employees, which includes 521 uniformed firefighters (KCFD, 2022).

TABLE 4.14-1: LIST OF NEARBY FIRE STATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCFD	Station No. 26	14670 Lost Hills Rd Lost Hills, CA 93249	15 miles southeast
KCFD	Station No. 25	100 Mirasol Ave, Buttonwillow, CA 93206	35 miles southeast

The proposed project consists of a photovoltaic solar facility with associated infrastructure and energy storage facilities. The project site is located within Battalion 2, which serves the western portion of Kern County. Battalion 2 consists of six stations (KCFD, 2020) and covers 951,600 acres of which 351,276 acres is State Responsibility Area (SRA) land area, which the California Department of Forestry and Fire Protection (CAL FIRE) has a legal responsibility to provide fire protection for this SRA land area. According to the CAL FIRE, California Fire Hazard Severity Zones Viewer, the project site and surrounding area is not within a SRA and the project site is within an unincorporated Local Responsibility Area (LRA) Unzoned and within a LRA Moderate fire hazard severity zone (CAL FIRE, 2022) (See **Figure 4.18-1, Fire Hazard Severity Zones for Local Responsibility Areas** located in Section 4.18, *Wildfire*, of this EIR).

The project site would be served by Fire Station #26, located at 14670 Lost Hills Rd, in the community of Lost Hills, approximately 15 miles southeast of the project site. In the event of a major fire or when short-staffed, other stations would be called on to respond, as necessary, including Fire Station No. 25, located at 100 Mirasol Ave, Buttonwillow, CA 93206. Further information on the two closest fire stations to the project site is included in **Table 4.14-1: List of Nearby Fire Stations**. The table identifies each type of facility, the name and address of the facility, and the approximate distance from the project site.

Kern County applies and utilizes the National Fire Code set forth by the National Fire Protection Association, the California Fire Code, the California Building Code, and the Kern County Ordinance Code to regulate fire safety.

The Kern County Emergency Medical Services Division (EMS) is the lead agency for the emergency medical services system in Kern County and is responsible for coordinating all system participants in the County, which include the public, fire departments, ambulance companies, other emergency service providers, hospitals, and Emergency Medical Technician (EMT) training programs throughout the County. The EMS includes a system of services organized to provide rapid response to serious medical emergencies, including immediate medical care and patient transport to a hospital setting. EMS covers day to day emergencies, disaster medical response planning and preparation, and preventative health care. The department also provides certification and re-certification for EMT's, paramedics, specialized nurses (MICN), and specialized dispatchers (EMD) (Kern County Public Health Services Department, 2018). The nearest hospital is the Adventist Health Delano Hospital, located at 1401 Garces Hwy in the City of Delano approximately 36 miles east of the project site.

The Kern County Fiscal Year 2021-22 Recommended Budget (County of Kern, 2021) shows on-going deficiencies in funding for staffing and a \$50 million backlog for capital equipment costs for the Fire Department. The budget report finds that the current funding status, with one time infusion of funding, is not sustainable and requires continued strategic planning for capital needs and operational staffing stability.

Law Enforcement Protection

Kern County Sheriff's Department

The Kern County Sheriff's Office (KCSO) provides basic law enforcement services in the unincorporated areas of the County, which includes the project area. The KCSO enforces local, State, and federal laws and is responsible for crime prevention, field patrol (ground and air), crime investigation, the apprehension of offenders, regulation of noncriminal activity, and related support services such as, patrolling off-highway vehicle recreation areas in the desert and mountainous areas of the County. Traffic and parking control functions are also provided along with some investigation of property damage reports and traffic accidents. Complete investigations are conducted for injury, fatal, intoxication-related, and hit and run accidents.

The KCSO is currently employs 1,202 people, including 567 authorized deputy sheriff positions, 338 detention deputy positions, and 297 sheriff's professional support staff and serves over 890,000 people in the Kern County area (KCSO, 2022). The headquarters for the KCSO is located at 1350 Norris Road in the City of Bakersfield. The KCSO consists of 14 substations that provide patrol services (KCSO, 2022). The nearest substation that would provide service to the project site is the Wasco City Substation located approximately 34 miles southeast of the project site, at 748 F St. Wasco, CA. This substation is assigned to the communities of Shafter and Wasco, and the rural areas north to King's County and west to San Luis

Obispo County. The Wasco City Substation is currently staffed by 1 Sergeant, 2 Senior Deputies, 15 Deputies, and 1 Sheriff Support Technician (KCSO, 2021). Information on the three closest substations to the project sites are included in **Table 4.14-2: List of Nearby Sheriff Substations**.

TABLE 4.14-2: LIST OF NEARBY SHERIFF SUBSTATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCSO	North Area Substation	181 East First Buttonwillow, CA	35 miles southeast
KCSO	Wasco City Substation	748 F St. Wasco, CA 93215	34 miles southeast
KCSO	Delano Substation	455 Lexington St. Delano, CA 93215	36.5 miles east

The KCSO strives to respond to calls as quickly as possible. Life-threatening calls that involve a danger to someone's personal safety are given first priority. Response time is defined as the time required to respond to a call for service, measured from the time a call is received until the time a patrol car arrives at the scene. Response times naturally vary depending on the severity of the call, available staff, and location of patrol car. Average response time for the KCSO is five minutes or less for an emergency or immediate-response incident (e.g., a crime that is in progress and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life-threatening).

Response time to an emergency at or near the project site would vary depending on the level of demand at the substation at the time of the call. If demand is high, the response time would be longer than the average times given above. The response time for a nonemergency call could be eight minutes or more, depending on staffing and the number of other calls for service. In some areas, response may not occur at all for nonemergency calls due to funding deficiencies.

The Kern County Fiscal Year 2021-22 Recommended Budget (County of Kern, 2021) shows on-going deficiencies in funding for staffing, training and equipment. While the adopted Budget provides a transfer from the General Fund reserves to prioritize law enforcement, the CAO report confirms this is not sustainable.

Off-Highway Vehicle (OHV) Enforcement Team

In 2000, the KCSO created the Off-Highway Vehicle (OHV) Enforcement Team that can be deployed to off road riding areas and adjacent communities in Kern County, as needed. The goal of the OHV Enforcement Team is to provide a safe and secure environment for the OHV community and nearby residents, and to help protect sensitive natural resources. Kern County attracts over 800,000 visitors a year to the local OHV riding. The OHV Enforcement Team patrols numerous off road riding areas in Kern County. The OHV Enforcement Team works closely with officers from the Bureau of Land Management (BLM), California State Parks, and other local law enforcement agencies (KCSO, 2022b).

California Highway Patrol

As a major statewide law enforcement agency, the California Highway Patrol (CHP) is responsible for managing and regulating traffic for the safe, lawful, and efficient use of California highways. The CHP

patrols State highways and all County roadways, enforces traffic regulations, responds to traffic accidents, and provides service and assistance to disabled vehicles. The CHP has a mutual aid agreement with KCSO.

The CHP is divided into eight divisions that provide services in areas of California (CHP, 2009). The project site is within the jurisdiction of the Central Division, which includes two long freeway segments that run the flat length of the Division: a 244-mile stretch of State Route 99 and a 275-mile stretch of Interstate 5. (CHP, 2021). The nearest Inland Division office to the project site is located at 5179 N. Gates Avenue, Fresno, CA 93722, approximately 72 miles south of the project site.

Schools/Parks/Other Public Facilities

As described in the Initial Study prepared for the project it was determined that no impacts to schools or parks would occur as a result of project implementation, and therefore no further analysis is warranted (**Appendix A**). The following description of schools, parks, and other facilities in the project vicinity is provided for informational purposes; however, an impact analysis for schools and parks is not included herein.

The project site is in a rural area with minimal residential facilities in the project vicinity. The proposed site falls within the Lost Hills Union School District with the closest school to the project being Lost Hills Elementary, located approximately 15 miles southeast of the project site.

The Kern County Parks and Recreation Department manages an extensive system of large regional parks designed to serve the entire countywide population, and small neighborhood and community parks intended primarily to meet the recreational needs of nearby residents in unincorporated communities. Kern County Parks & Recreation manages 8 regional parks, 40 neighborhood parks, and 25 public buildings, supervises three golf courses and landscapes 76 county buildings (Kern County, 2022). There are no parks or trail or within project site boundaries.

Other public facilities include library facilities, post office facilities, and courthouses. The Kern County Library has 24 branches and 2 mobile libraries, which serve 850,000 residents within the County, including incorporated municipalities (Kern County Library, 2020). Additionally, there are currently 37 post offices that serve the County (United States Postal Service [USPS], 2020). Furthermore, there are currently 12 facilities serving the Superior Court of California in Kern County (Superior Court of California, 2021).

The Kern County Fiscal Year 2021–2022 preliminary recommended budget shows ongoing deficiencies in funding for libraries and parks, with closing and lack of maintenance for facilities used to balance budget needs (County of Kern 2021).

4.14.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Fire Code

The 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operation. Chapter 6 (Building Services and Systems) of the Code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Building services and systems are addressed include emergency and standby power systems, electrical equipment, wiring and hazards, and stationary storage battery systems. Chapter 33 (Fire Safety During Construction and Demolition) of the Code outlines general fire safety precautions to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment and promote prompt response to fire emergencies. Features regulated include fire protection systems, fire fighter access to the site and building, means of egress, hazardous materials storage and use and temporary heating equipment and other ignition sources.

California Department of Forestry and Fire Protection (CALFIRE)

Under Title 14 of the California Code of Regulations (CCR), CALFIRE has the primary responsibility for implementing wildfire planning and protection for State Responsibility Areas (SRAs). CALFIRE develops regulations and issues fire-safe clearances for land within a fire district of the SRA. More than 31 million acres of California's privately-owned wildlands are under CALFIRE's jurisdiction.

CAL FIRE adopted Fire Hazard Severity Zone maps for SRAs and LRAs in 2007. Fire Hazard is a way to measure the physical fire behavior so that people can predict the damage a fire is likely to cause. Fire hazard measurement includes the speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front. The project site is not located within a SRA but it is located in an area of moderate fire hazard and within an unincorporated LRA (CAL FIRE, 2022).

In addition to wildland fires, CALFIRE's planning efforts involve responding to other types of emergencies that may occur on a daily basis, including residential or commercial structure fires, automobile accidents, heart attacks, drowning victims, lost hikers, hazardous material spills on highways, train wrecks, floods, and earthquakes. Through contracts with local government, CALFIRE provides emergency services in 36 of California's 58 counties (CALFIRE, 2022).

Local

Construction and operation of the project would be subject to applicable policies and regulations including those contained in the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to public services. The policies, goals, and implementation measures in the Kern County General Plan related to public services that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not

specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 1. Land Use, Conservation and Open Space Element

1.4. Public Facilities and Services

Goal

Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.

Policies

Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.

Policy 6: The County will ensure adequate fire protection to all Kern County residents.

Policy 7: The County will ensure adequate police protection to all Kern County residents.

Implementation Measures

Measure A: Continue to administer the Capital Improvement Program (CIP) and coordinate with public utility providers listing the necessary improvements to Kern County's public services and facilities in collaboration with key service providing agencies and the County Administrative Office as a first step toward the preparation of a long-term Public Services Plan for Kern County. This plan addresses the projected demand for public services throughout the County in comparison with projected revenues and identifies long-term financial trends for the major public service providers. The CIP and General Plan can assure compliance with the provisions of Government Code Sections 65401 and 65402 which require review of all capital facility decisions for consistency with this General Plan.

Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.

Measure J: Ensure that the Superintendent of Schools and the respective school districts are informed of development proposals and are afforded the opportunity of evaluating their potential effect on the physical capacity of school facilities.

Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.10. General Provisions

Goal

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1. Public Services and Facilities

Policies

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure that it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Chapter 4. Safety Element

4.6. Wildland and Urban Fire

Policies

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6: All discretionary projects shall comply with the adopted fire code and the requirements of the fire department.

Implementation Measure

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Kern County Fire Department Wildland Fire Management Plan

The KCFD Wildland Fire Management Plan adopted in 2009 assesses the wildland fire situation throughout the SRA within the County. The Plan includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan systematically assesses the existing levels of wildland protection services and identifies high-risk and high-value areas, which are potential locations for costly and damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes what can be done to reduce future costs and losses. The project site is located within LRA Moderate (CAL FIRE, 2022).

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2019 California Fire Code and the 2018 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees therefore (Kern County, 2019).

Kern County Fire Department Hazards Mitigation Plan

The purpose of the KCFD Multi-Jurisdictional Hazards Mitigation Plan is to reduce or eliminate long-term risk to people and property from natural hazards and their effects in Kern County. The plan includes specific recommendations for actions that can mitigate future disaster losses, as well as a review of the County's current capabilities to reduce hazards impacts. This multi-jurisdictional plan includes Kern County, and the incorporated municipalities Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The plan also covers 53 special districts that include school, recreation and park, water, community service and other districts. The plan has been formally adopted by each participating entity and is required to be updated a minimum of every five years (KCFD, 2020).

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March of 2018 is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. Additionally, the plan provides an annual report of unit

accomplishments, which, in 2017, included completion of a number of fuel reduction projects, hosted three wildfire safety expos in battalions 1,5, and 7, and the award of three SRA fuel reduction grants for a total of \$500,000. The plan gives an overview of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69 percent of Kern County areas are within a SRA. The County is broken up into six different fuel management areas, Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 2 (KCFD, 2018).

Fire Prevention Standard No. 503–507 Solar Panels

The Kern County Fire Department Fire Prevention Division adopted Standard No. 503–507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 2016 CFC and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal’s Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2021).

California State Legislature Active Solar Energy Exclusion

The State of California has provided reduced property taxes for the solar industry. No other industry has this type of property tax reduction outside a local government providing a specific incentive of a development project.

The California Franchise Tax Board’s website outlines that the property tax incentive for the installation of an active solar energy system is in the form of a new construction exclusion (California State Board of Equalization, 2020). It is not an exemption. The installation of a qualifying solar energy system will not result in either an increase or a decrease in the assessment of the existing property. The site states: *“Generally, when something of value is physically added to real property, the addition is assessed at current market value and this value is added to the existing base year value of the real property. When an active solar energy system is installed, it is not assessed, meaning that the existing assessment will not increase.”*

The value of the underlying land and some improvements such as operations and maintenance buildings and battery storage are assessed, but the solar panels and majority of equipment are not. Effective June 20, 2014, the sunset date for the active solar energy system new construction exclusion was extended through the 2023-24 fiscal year. The statute is now scheduled to sunset on January 1, 2025. The Kern County Assessor has calculated that the estimated lost annual revenue to the County General Fund from the existing large scale commercial scale solar projects already built is \$19,924,000 that they would normally pay (Kern County Planning and Natural Resources Department, 2020). They currently pay \$1,511,000.

This revenue is only the funding that would normally go to the General Fund to pay for public services and facilities that maintain quality of life for communities and residents in unincorporated Kern County. The Kern County 2021-2022 Recommended Budget details the General Fund, which funds many County operations, as totaling \$776.2 million, a decrease of \$106.9 million, or 12.10% from the 2020-2021 budget.

4.14.4 Impacts and Mitigation Measures

Methodology

The methodology used to evaluate potential public services impacts includes the following: (1) evaluation of existing fire and police services and personnel for the fire and law enforcement stations serving the project site; (2) determination of whether the existing fire and law enforcement services and personnel are capable of servicing the proposed project, in addition to the existing population and building stock; and (3) determining whether the proposed project's contribution to the future service population would cause fire or police station(s) to operate beyond service capacity. The determination of the significance of the proposed project on fire protection and emergency medical and police protection services considers the level of services required by the proposed project and the ability of KCFD and KCSO to provide this level of service and maintain the regular level of service provided throughout the County, which in turn could require the construction of new or expansion of existing facilities. The methodology for this analysis included a review of published information pertaining to KCFD and KCSO. The contribution of the project through established property tax revenues was reviewed to fully document the projects contribution to all government services and facilities that provide for stability in communities and prevent decline of the communities' physical neighborhoods.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on public services.

A project could have a significant adverse effect on public services if it would:

- a. 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 to other performance objectives for any of the public services:
 - i. Fire Protection
 - ii. Law Enforcement Protection
 - iii. Schools
 - iv. Parks
 - v. Other Public Facilities

Project Impacts

Impact 4.14 -1: The project would result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services or police protection services.

Fire Protection

Construction and Decommissioning

The proposed project includes an operation and maintenance facility that would be located within the project site boundaries. This facility would include a building and storage yard that would be constructed as a base for the ongoing operations and maintenance of the Azalea Solar Project.

As described in Chapter 3, Project Description, a maximum of 500 workers per day would be required during construction of the proposed project. The presence of the construction workers would be temporary and anticipated to last approximately 12 months for the project construction period starting in 2024. PG&E substation construction at the beginning of 2023.

The project site is not located in a Very High Severity Zone or a State Responsibility Area. According to CAL FIRE's Kern County Fire Hazards Severity Zone Maps for the Local Responsible Areas, the project site is classified as LRA Moderate (CAL FIRE 2007). Moderate zones are typically wildland-supporting areas of low fire frequency and relatively modest fire behavior. The proposed project would comply with all applicable wildland fire management plans and policies established by CAL FIRE and the KCFD. Accordingly, the project is not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires (refer to Section 4.18, Wildfire).

Fire protection facilities requirements are based on the number of residents and workers in the KCFD service area. Service demand is primarily tied to population, not building size, because emergency medical calls typically make up the majority of responses provided by the fire department. As the number of residents and workers increase, so do the number of emergency medical calls. There are no residential uses proposed as part of the project. Therefore, no residents would occupy the project site, and an increase in service demands as a result of an increase in residential uses would not occur.

Although construction of the proposed project would increase the number of people on the project site, the increase would be temporary. Fire hazards from the project as a large-scale construction project would increase the need for response from the KCFD for fire protection and emergency services. Although construction would be temporary and short term, fire hazards from the project would potentially increase the need for fire response or emergency services during the construction period. However, as required by Mitigation Measure (MM) 4.14-1, the project proponent would prepare and implement a Fire Safety Plan that would contain notification procedures and emergency fire precautions consistent with the 2019 California Fire Code and Kern County Fire Code. The Fire Safety Plan would be for use during the construction period and would include emergency fire precautions for vehicles and equipment, as well as implementing fire rules and trainings so temporary employees are equipped to support handling fire threats.

Given the temporary nature of the project's construction and decommissioning phases, impacts to fire protection services and facilities during project construction would be less than significant with implementation of MM 4.14-1.

Operation

Once constructed, the project would have up to 5 employees on each Solar Facility site during the operational phase of the project. Employees would monitor the site and conduct maintenance activities. Although unlikely, maintenance activities could introduce fire risks to the project site. However, all maintenance activities would be required to comply with the fire safety plan implemented per Mitigation Measure MM 4.14-1, which would help reduce fire risks onsite. In addition, all project facilities would have been designed and constructed in accordance with the 2019 California Fire Code and Kern County Fire Code such that fire hazards are reduced and/or avoided.

The project includes one energy storage facilities that would have a fire rating in conformance with County and California Building Code standards. The energy storage facilities will include specialized fire suppression systems installed for the battery rooms to minimize fire risk. In accordance with Mitigation Measure MM 4.14-1, a fire safety plan will be prepared to ensure the energy storage facilities are constructed and operated in accordance with County and California Building Code standards that will minimize potential impacts to public services and associated fire hazards.

The project operator would be required to pay a Kern County cumulative impact fee (CIC), through implementation of Mitigation Measure MM 4.14-2 to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services and facilities. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measure MM 4.14-3. Through implementation of Mitigation Measure MM 4.14-4, The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. With implementation of Mitigation Measures MM 4.14-1 through MM 4.14-4, any potential operational impacts on fire protection services would be reduced. The project would not result in the need for new or physically altered KCFD facilities and impacts would be less than significant.

Law Enforcement Protection

Construction and Decommissioning

As described above in Section 4.14.2, *Environmental Setting*, the KCSO provides primary law enforcement protection services for the project site and surrounding areas. The Wasco City Substation located approximately 34 miles southeast of the project site, would provide primary law enforcement services to the project site. Similar to fire protection services, the need for police protection services would increase during construction of the proposed project. However due to existing budget constraints, substations may close or be modified to address fiscal limitations.

During construction, the proposed project may attract vandals or present other security risks. The project site is located in a relatively remote location surrounded by undeveloped vacant land, agricultural land, and rural residential development and is unlikely to attract attention that would make project facilities

susceptible to crime. Therefore, a large increase for KCSO services is not expected. However, construction activities may temporarily increase traffic volumes along CA-33 and I-5 during the construction period. The added traffic associated with workers commuting to the project site, haul routes, deliveries, and other project-related traffic would be temporary and, therefore, would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways.

Additionally, chain-link fencing would be installed around the perimeter of each site, substation, and other areas requiring controlled access, for safety and security purposes. All fencing shall comply with all applicable requirements of the Kern County Public Works Department/Building Inspection Division. The fencing would remain for the life of the project.

The additional volume of vehicles associated with workers commuting to the project site during construction would be temporary and is not expected to adversely affect traffic (see Section 4.15, *Traffic and Transportation*, for more details). Therefore, new or physically altered KCSO facilities would not be required to accommodate the proposed project and impacts to the CHP patrol are not anticipated. Impacts would be less than significant.

Operation

Project operation could attract vandals or present other security risks. As described above, the project site is located in a relatively remote location in a rural community and is thus unlikely to attract attention that would make project facilities susceptible to crime. The security fencing around the perimeter of each site and other areas requiring controlled access and controlled access gates would minimize the need for surveillance and response by KCSO during project operation. Furthermore, all facility personnel, contractors, agency personnel, and visitors would be logged in and out of the facility at the main office located at each of the proposed O&M building during normal business hours. Therefore, new or physically altered KCSO facilities would not be required to accommodate the proposed project. The additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic (see Section 4.15, *Transportation and Traffic*, for more details). Therefore, impacts to the CHP patrol are not anticipated.

The project would implement Mitigation Measure MM 4.14-2 to provide a CIC to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities and assuring the provision of adequate public services and facilities. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measure MM 4.14-3. Through implementation of Mitigation Measure MM 4.14-4, The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. As a result, impacts would be less than significant.

Schools/Parks/Other Public Facilities

Construction and Decommissioning

The proposed project would require an average of 500 temporary daily workers during the construction period. These construction workers would likely come from an existing local and/or regional construction labor force and would not likely relocate their households as a consequence of working on the project. If temporary housing should be necessary, it is expected that accommodations would be available in the

nearby hotels. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, through the implementation of Mitigation Measure MM 4.14-5 which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. Therefore, project construction workers would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or expansion of recreational facilities which might have an adverse effect on the environment, nor result in substantial adverse physical impacts associated with the construction of new or physically altered facilities in order to maintain acceptable service ratios. Impacts during construction would be less than significant.

Operation

During the operational phase, the project would employ up to 5 full-time equivalent (FTE) personnel (or personnel hours totaling 5 FTE positions (i.e., an average of 200 personnel hours per week) who would commute to the site. Operational employees would intermittently visit the project site for routine inspection, maintenance, and repair of solar arrays and accessory components. Up to 5 full-time equivalent employees would be on site intermittently to perform maintenance duties. These employees would likely come from an existing local and/or regional labor force and would not likely relocate their households as a consequence of working on the project. Even if the maintenance employees were hired from out of the area and had to relocate to northwestern Kern County, the resulting addition of potential families to this area would not result in a substantial increase in the number of users at local schools as accommodations for temporary housing would be available in the nearby hotels. Therefore, staff required during operation would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or expansion of recreational facilities which might have an adverse effect on the environment, nor result in substantial adverse physical impacts associated with the construction of new or physically altered facilities in order to maintain acceptable service ratios. Impacts during construction would be less than significant.

Unlike other businesses in California, large scale solar has an exclusion from property taxes on their equipment. This property tax exclusion results in the project not providing the revenue needed to provide services and facilities for both the project and the communities that prevent decline of the physical neighborhoods in unincorporated Kern County. This is a direct impact from the project structure and the land if built with another type of land use would produce property tax revenue to provide necessary services and facilities and prevent physical decline of homes and businesses due to vacancy and inability for response for all services, including code enforcement to law enforcement, fire, roads and health and safety issues such as elderly care and child protection services. The cumulative impacts of this active solar tax exclusion over the life of the over 36,000 acres of projects has resulted in a loss to the General Fund over the last 10 years of over \$103 million and deepened the on-going fiscal emergency of the county. Public policies in the Kern County General Plan require development to address economic deficiencies in public services and facilities costs. Further, the cumulative impacts of all the projects in addition to this project on various resources including aesthetics, air and biological resources have contributed to changing the visual and community character of the unincorporated communities and caused decline due to using land for a use that does not provide normal property tax revenue.

Mitigation Measure MM 4.14-2 provides a CIC calculated on net acreage that excludes assessable structures and permanent improvements (Operation and Maintenance Building and Energy Storage) and legally unbuildable land (recorded easements). The charge factor was calculated based on the fair share under the Government Code that the project would have paid if the Tax Exclusion was not present. The amount the project should pay is calculated as \$620 per net acre. This is in addition to the normal property tax revenue legally assessed on the property as the fair share that is provided to the Kern County General fund. As this project application had already been deemed complete and commenced processing when the Dec 8, 2020 report on the amount of the deficiency in the revenue from the State of California Active Solar Energy Exclusion was presented to the Kern County Board of Supervisors, an accommodation is included in the mitigation that requires a one-time charge for the General fund contribution. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than \$3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measure MM 4.14-3. Through implementation of Mitigation Measure MM 4.14-4, The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. With this CIC and assessed taxes if the project is sold, the project impacts on public services and facilities and contribution to decline of communities is less than significant.

The construction, operation and decommissioning of the Gen-tie would affect a much smaller land area than the solar facilities, with fewer permanent structures, spaced apart over several miles, and would not require permanent staffing for operations and maintenance. Similar to the PV solar facility, the project proponent would implement Mitigation Measure MM 4.14-1 which would require the preparation of a fire safety plan to reduce the risk of fire during construction, operation, and decommissioning of the gen-tie. While impacts to fire protection services are considered less than significant without mitigation, Mitigation Measure MM 4.14-1 would further reduce impacts by providing implementation of a fire safety plan. The gen-tie would have similar but substantially fewer effects than the PV solar facility on police protection services. The gen-tie would be similar to existing infrastructure in the area and would not be anticipated to attract or cause incidents such as the theft of equipment and/or vandalism. Additionally, the gen-tie would not contribute to substantial population growth that could increase demand for public schools or other public services or cause the need for new or altered facilities.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the PG&E Arco Substation would be extended westerly to the Arco Substation and the access road would be extended from the northerly property boundary to King Road. Improvements associated with the construction and operation of the PG&E Interconnection Facilities would include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These areas are characterized by undeveloped land and construction of this infrastructure would not include structures or facilities requiring permanent staffing or visitors on site. Further, these areas would be covered by the fire safety plan prepared for the project, as required by Mitigation Measures MM 4.14-1. Demand on police protection services would not be greatly increased, as construction of the access road would not be anticipated to attract or cause incidents such as vandalism. Additionally, the access road would not contribute to substantial population growth that could increase demand for public schools or other public services or cause the need for new or altered facilities. Impacts in this regard would be less than significant.

Mitigation Measures

MM 4.14-1: Prior to the issuance of grading or building permits the project proponent/operator shall develop and implement a fire safety plan for use during construction, operation and decommissioning.

The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

- a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
- b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition.
- c. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees.
- d. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.
- e. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.
- f. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.
- g. Building plans shall be included for the energy storage system to verify adherence to County and California Building Code standards.

MM 4.14-2: The following Cumulative Impact Charge (CIC) shall be implemented as payment on approved Conditional Use Permit acreage.

- a. Submittal of Building Permit and Phasing
 - i. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification.
 - ii. The map for either the total project or a phase shall calculate the Cumulative Impact Charge (CIC) net acreage as follows:
 - a) Total gross acreage (Phase)
 - b) Total acres for Operations and Maintenance building permanent accessory improvements

- c) Total acres for Energy Storage structure and permanent accessory improvements
- d) Total acres of recorded easements
- iii. Formula: Net Acreage = (ii)a minus the sum of [(ii)b + (ii)c + (ii)d].
- iv. Temporary storage areas or non-permanent commercial coaches or cargo containers for construction or operations are not eligible for inclusion under (ii)b or (ii)c, above.
- v. All areas of buildings, accessory improvements and easement used in the calculations shall be shown on the submitted Phase Map.
- vi. Any property included in the approved Conditional Use Permit that is not included in a phase must be included in the last phase or a formal modification processed to remove it from the Conditional Use Permit.
- b. Calculation and Payment of Cumulative Impact Charge (CIC)
 - i. A payment of \$620 per net acre for the map shown with the building permit submittal shall be paid upon issuance of the first building permit. If it is not paid within 30 days after the issuance of the first building permit for the phase regardless of the total number of building permits or type of building permit issued, all such permits shall be suspended until the fee is paid in full.
 - ii. Payments shall be made to the Planning and Natural Resources Department for transfer directly to the County Administrative Office Fiscal Division (CAO) and labeled Cumulative Impact Charge (CIC) with the project name and phase number.
 - iii. Any acres denoted for an operation and maintenance building or energy storage that are not built, cannot be used for solar panels unless payment is provided for the Cumulative Impact Charge (CIC)

MM 4.14-3: Written verification of ownership of the proposed project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company that pays assessed taxes that total less than \$3,000 per megawatt per year, then a Supplemental Cumulative Impact Charge (SCIC) shall be paid for the difference annually up to \$3,000 per megawatt. The SCIC payments shall be made annually directly to the County Administrative Office (CAO) Fiscal Division and labeled “Supplemental Cumulative Impact Charge (SCIC)” with the project name and phase number. The fee shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year.

MM 4.14-4: The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and

use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.

MM 4.14-5: Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.14-1 through MM 4.14-5, impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or substantially increase other environmental impacts. Cumulative impacts for a project are considered significant if the incremental effects of the individual projects are considerable when viewed in connection with the effects of past projects, and the effects of other projects located in the vicinity of the project site. The cumulative impact analysis area for public services includes the service areas for each of the fire, police and other governmental offices/facilities serving the project site. For both the KCSO and the KCFD, service areas comprise unincorporated areas of Kern County. As discussed above, police and fire service impacts related to the proposed project would be less than significant. Mitigation Measure MM 4.14-1 requires implementation of a fire safety plan during project construction, operation and decommissioning that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services onsite. Mitigation Measures MM 4.14-2 through MM 4.14-5 require the project proponent to pay a CIC to reduce significant impacts to all public services, including fire and law enforcement services, provided by the Kern County General Fund. Implementation of Mitigation Measures MM 4.14-2 through MM 4.14-5 would also prevent the decline of services in unincorporated communities that result in physical impacts on neighborhoods. Such cumulative impacts include increase in vandalism on public spaces such as parks, lack of road and park facilities maintenance, abandoned vehicles and buildings, trash abandonment on private property, and lack of funding for code enforcement of regulations for public health and safety, lack of services for homelessness prevention programs, as well as lack of services and facilities for elder, adolescent and child health and safety services and general mental health facilities. With payment of the required mitigation charge as assessed by the Kern County Planning and Natural Resources Department for transfer to the Kern County General Fund, impacts from the project's cumulative contribution to decline of services would be appropriately mitigated. Therefore, the project would not create a cumulatively considerable impact on public services even from the State of California Active Solar Energy Exclusion which creates a lack of fair share funding by the project for public services.

Therefore, because the project would not create a significant impact on public services, and the other related projects would also be expected to avoid or mitigate impacts on public services, this project would comply with the goals, policies, and implementation measures of the Kern County General Plan, and cumulatively

significant impacts would be less than significant. Therefore, the project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects, and the effects of probable future projects. The project would not create a cumulatively considerable impact related to public services with the incorporation of MM 4.14-1 through MM 4.14-5, and the project would have a less than significant cumulative impact.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project site and the access road would be extended from the northerly property boundary to King Road. Improvements associated with the construction and operation of the PG&E Interconnection Facilities would include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These areas are characterized by undeveloped land and construction of this infrastructure would not include structures or facilities requiring permanent staffing or visitors on site. Further, these areas would be covered by the fire safety plan prepared for the project, as required by Mitigation Measures MM 4.14-1. Demand on police protection services would not be greatly increased, as construction of the access road would not be anticipated to attract or cause incidents such as vandalism. Additionally, the access road would not contribute to substantial population growth that could increase demand for public schools or other public services or cause the need for new or altered facilities. Therefore, demand on public services would be limited, and would not be cumulatively considerable.

Mitigation Measures

Implement Mitigation Measures MM 4.14-1 through MM 4.14-5.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.14-1 through MM 4.14-5, cumulative impacts would be less than significant. Impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

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Section 4.15

Transportation and Traffic

4.15.1 Introduction

This section of the EIR describes the affected environment, regulatory setting, and project impacts for transportation. It also describes mitigation measures that would reduce these impacts, where applicable. The information and analysis in this section is largely based on the Traffic Impact Analysis (Stantec, 2021), which is provided in Appendix M of this EIR.

4.15.2 Environmental Setting

The project is a 340-acre solar facility located on a 640-acre site in the northwestern portion of Kern County. The project site is located south of the Kern County/Kings County Line, in an unincorporated area of northwestern Kern County, CA. The project is located approximately 2.5 miles northwest of Twisselman and King Roads intersection, approximately 10 miles south of Utica Avenue, approximately 15 miles northwest of the community of Lost Hills, approximately 6 miles west of Interstate 5, and approximately 5 miles east of State Route 33. See **Figure 3-1: Regional Vicinity Map**.

Regional Setting

Major Highways

The project site is located near 4 major highways that would provide access to the general vicinity of the proposed project during the construction and operation phases. Interstate 5 (I-5) is the largest highway that would provide regional access from the east of the project site running in the north and south directions. State Route 33 is located to the west of the project site and also runs north and south. State Route 46 runs east and west and is located south of the project site, connecting with both I-5 and State Route 33. State Route 41 runs northeast and southwest in the local vicinity. It is located to the northwest of the project site and also connects with I-5 and State Route 33 further north.

Interstate 5 is a major, four-lane divided freeway that extends north from the Mexican border to the Canadian border and provides access for goods movement, shipping, and travel. This highway crosses the western portion of Kern County and is designated as an arterial/major highway by the Kern County General Plan Circulation Element. The project site is located approximately 6.7 miles west of I-5.

State Route 33 is a north-south state highway running from Ventura County to San Joaquin County. In the unincorporated sections of Kern County, where the project site is located, SR-33 is also referred to as West Side Highway. The project site is located approximately 3.7 miles east of the project site.

State Route 46 is a divided highway that runs east-west across San Luis Obispo and Kern County, providing regional access to the project site. SR-46 crosses the Diablo Range, connecting Cambria and Famoso. The project site is located approximately 10 miles north of SR-46.

State Route 41 runs as either two-lane rural highway or four-lane divided highway from San Luis Obispo County to Mariposa County. The project site is approximately 11.6 miles southeast of SR-41.

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways within Kern County (see Section 4.15.3, *Regulatory Setting*, below for more information on the State Scenic Highway Mapping System). The closest Eligible Scenic Highway is a portion of SR-41, that starts in San Luis Obispo County at the intersection with SR-46, then dips into Kern County, and ends in Kern County at the intersection with SR-33 (Caltrans, 2022). According to the Kern County General Plan Circulation Element, a scenic route is any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic quality. The Circulation Element contains goals and policies that discuss designating SR-41 as a scenic highway to protect adjacent viewsheds.

Non-Motorized Transportation

Bicycling is considered an effective alternative mode of transportation that can help to improve air quality, reduce the number of vehicles traveling along existing roads and highways, and reduce energy consumption. There are 67 miles of existing bicycle facilities in the unincorporated portions of Kern County. There are no dedicated bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways.

Other Transportation Facilities

Public Transportation

Public transportation in Kern County is provided by Kern Transit, which offers 17 fixed routes throughout the County and a dial-a-ride general public transportation service for residents in most communities. Route 110 provides fixed route scheduled bus service between Delano and Bakersfield primarily on SR-99, with stops in the communities of Shafter, Wasco, and Mc Farland. Route 115 provides fixed route scheduled bus service between Lost Hills and Bakersfield on SR-99, SR-43, and SR-46, with stops in the communities of Shafter, and Wasco. No public transit routes pass or stop near the project site (Kern Transit, 2022).

Railways

The closest railway, the Bakersfield Subdivision, is operated by the Union Pacific Railroad and is located approximately 30 miles east of the project site.

Airport Facilities

Wonderful Pistachios & Almonds Airport is the nearest private airstrip, located approximately 6.3 miles south of the project site. Wonderful Pistachios & Almonds Airport is a private facility with an approximately 5,000-foot asphalt runway. The facility receives no regular scheduled flights and is not publicly accessible.

Avenal Vortac Avenue 117.1 is a public airstrip, located approximately 9 miles southwest of the project site in Lost Hills, CA.

Avenal Gliderport CA 69 is a private gliderport located approximately 20 miles to the northwest of the project site. The airport has one 3,000 foot long runway.

Boswell Airport is a private airstrip, located approximately 29 miles to the northeast of the project site. Boswell Airport is a private facility with an approximately 6815-foot dirt runway. The facility receives no regular scheduled flights and is not publicly accessible.

Wasco-Kern County Airport is the closest public airport located about 31 miles to the east of the project site. Wasco-Kern County Airport is a public facility with an approximately 6,815 foot asphalt runway. In operation since 1940, the facility serves an average of 27 flight operations a day.

Delano Municipal Airport is a public airport located about 36.5 miles to the east of the project site. Delano Municipal Airport is a public facility with an approximately 5,659 foot asphalt runway. In operation since 1940, the facility serves an average of 52 flight operations a day.

Local Setting

Site Access

Primary access to the proposed Facility is off King Road, approximately one mile north of the Project Site along an existing unnamed paved road. The road would provide access from the project site north to King Road.

Existing Roadway System

Interstate 5 (I-5) freeway is a four-lane divided highway, located approximately six miles east of the site, and State Route 33 (SR-33) is a two-lane undivided highway, located approximately six miles west of the site, that provide regional access to the project site. The following local roadways provide access to the project area.

King Road is a two lane un-divided paved roadway that runs generally north-south in the vicinity of the Project. Kern County General Plan does not provide classification for this roadway. There are no posted speed limits along this roadway but is assumed to be 55 miles per hour (mph). There are no bicycle or pedestrian facilities present.

Twisselman Road is a two lane un-divided paved roadway that runs east-west. The Kern County General Plan does not provide classification for this roadway. There are no posted speed limits along this roadway but is assumed to be 55 mph. There are no bicycle or pedestrian facilities present.

Access to the Project site from I-5 would be via Twisselman Road, King Road and the unnamed paved road off of King Road, one-mile north of the Project site. As mentioned above, an access road from King Road to the north boundary of the project site would be constructed as part of the proposed project.. The existing unnamed paved road would include minor improvements and construction of a new 20-foot wide access road for approximately 1 -1.25 miles depending on the final selection of the site access route.

Traffic Analysis

Existing traffic count data was collected in August 2021 by a professional traffic data collection firm, Transportation Studies inc. (TSI), for each study area midblock location to represent existing traffic. See Appendix A for the traffic count worksheets. Additional traffic count data was obtained from the California Department of Transportation (Caltrans) Traffic Census Program for the most recent available year (Appendix M).

Existing traffic conditions for the study roadway segments were evaluated based on the Kings County's LOS threshold volumes that represent Allowable Daily Service Volume by Roadway Segment. The roadway capacities for the target LOS D were compared to the observed traffic volumes. As shown in **Table 4.15-1: Existing Level of Service of Study Segments** below, all the roadway segments currently operate at an acceptable LOS A or B. Accordingly, under existing conditions all roadway segments meet the County and Caltrans target of LOS D.

The gen-tie and PG&E infrastructure, which would consist of both existing and new gen-tie and/or connection lines, are proposed within or proximate to existing transmission infrastructure and solar facility. The environmental setting characteristics relating to transportation for the construction, operation, and decommissioning of the gen-tie and PG&E infrastructure are substantially similar to the project site.

TABLE 4.15-1: EXISTING LEVEL OF SERVICE OF STUDY SEGMENTS

Roadway Segment	Roadway Type	Allowable Daily Service Volume (LOS D)	ADT	LOS
1. King Road north of Twisselman Road	Two-Lane Facility	16,400	1,233	LOS A
2. Twisselman Road east of King Road	Two-Lane Facility	16,400	1,112	LOS A
3. Twisselman Road west of King Road	Two-Lane Facility	16,400	870	LOS A
4. I-5 n/o junction SR 46	4-Lane Freeway	67,100	38,000	LOS B
5. I-5 n/o Twisselman Road	4-Lane Freeway	67,100	38,000	LOS B
6. I-5 s/o Twisselman Road	4-Lane Freeway	67,100	38,000	LOS B

Note: ADT = Average Daily Traffic, LOS = Level of Service, SR = State Route

SOURCE: Stantec, 2021, Appendix M

4.15.3 Regulatory Setting

Federal

Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, and private airports. The FAA regulates objects affecting navigable airspace. According to 49 Code of Federal Regulations Part 77.9, any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA of:

- Any construction or alteration exceeding 200 feet above ground level;
- Any construction or alteration:
 - Within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway where the longest airport runway exceeds 3,200 feet in actual length;
 - Within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway where the longest airport runway is less than 3,200 feet in actual length; and
 - Within 5,000 feet of a public use heliport which exceeds a 25:1 surface;
- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above standards;
- When requested by the FAA; and
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Failure to comply with the provisions of Federal Aviation Regulation Part 77 is subject to civil penalty under Section 902 of the Federal Aviation Act of 1958, as amended, and pursuant to 49 United States Code Section 46301(a).

State

California Department of Transportation

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. Eastern Kern County (i.e., including the project site and surrounding area) has been under the jurisdiction of Caltrans District 9 as of November 2015; prior to that time, all of Kern County was under the jurisdiction of Caltrans District 6. The Caltrans regulations below apply to potential transportation and traffic impacts of the project.

California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of State and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

Project Development Procedures Manual, Chapter 27. Access Control Modification. Requires Caltrans approval of proposed connections to a public road through submittal of a proposal to Caltrans (Caltrans, 2020).

Local

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan Circulation Element for transportation that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference. Kern County historically used a threshold of LOS D for the minimum acceptable operation of its transportation facilities.

Circulation Element

2.1 Introduction

Goals

- Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.
- Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.

2.3.3 Highway Plan

Goal

- Goal 5: Maintain a minimum LOS D.

Policies

- Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and midsection lines. This is because the road centerline can be determined by an existing survey.
- Policy 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow

construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection “grid” will comprehensively apply to the Mountain Region.

Policy 3: This plan’s road-width standard are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.

- Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;
- Arterial [Major Highway] Minimum 110-foot right-of-way;
- Collector [Secondary Highway] Minimum 90-foot right-of-way;
- Commercial-Industrial Street Minimum 60-foot right-of-way; and
- Local Street [Select Local Road] Minimum 60-foot right-of-way.

Implementation Measure

Measure A: The Planning Department shall carry out the road network policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. The Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4 Future Growth

Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below LOS D. Utilization of the California Environmental Quality Act (CEQA) process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space, and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along state routes are necessary then roads shall be built to California Department of Transportation (Caltrans) standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers

may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.

Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.

Policy 6: The County may accept a developer's road into the County's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

Implementation Measures

Measure A: The County should relate traffic levels to road capacity and development levels. To accomplish this, the Kern County Roads Department and the Kern County Planning and Natural Resources Department should set up a monitoring program. The program would identify traffic volume to capacity ratios and resulting level of service. The geographic base of the program would be traffic zones set up by Kern Council of Governments.

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements

Goal

Goal 2: Kern County intends to set up a system maintaining and coordinating road vacation procedures in all elements of the General Plan and the incorporated cities general plans.

Policies

Policy 1: A road vacation influencing the construction or operation of expressway, an arterials or collector highway may occur with, or after, amending this Element. Kern County will not vacate any public expressway, arterial or collector highway right-of-way without amendment to this Element. The County will need to amend the right-of way status to local or commercial-industrial streets.

Policy 2: A study, prepared at the applicant's expense, shall accompany the road vacation application. The study should provide information that will aid in finding the importance of the entire length of the right-of-way. The study would include a review of existing and proposed land uses and localized traffic modeling. This will help Kern County decide what corresponding changes are needed to the Land Use, Open Space and Conservation Element, or affected specific plan. This also will help Kern County decide if additional public road services or other traffic management are required elsewhere.

Policy 3: If the road vacation applicant is a private entity, all costs for the public hearing shall be borne by the applicant. Also, costs associated with providing any necessary additional public road services or other traffic management caused by the road vacation shall be paid by the applicant.

- Policy 4: The vacation of a road shall not take away legal access to adjacent properties or "land-lock" any legal lot or parcel of record. Legal access shall be determined through a report submitted with the application for road vacation.
- Policy 5: If Kern County determines that the right-of-way is not needed for circulation in the general area, a road vacation may be authorized. An acceptable project shall be determined through a report submitted with the road vacation application and in keeping with traffic modeling parameters of this Plan.
- Policy 6: A road vacation may be authorized if physical conditions such as natural, or manmade topography prevent rational extension of the facility. Physical conditions affecting roadways shall be determined through a report submitted with the road vacation application.
- Policy 7: A road vacation shall only affect public, recorded rights-of-way or public service easements. The potential effects of a road vacation upon rights-of-way and easements are to be determined by a report submitted with the road vacation application. A vacation of private access or private service easement is not under County jurisdiction. Kern County considers these matters "civil" actions. These civil actions should be acted upon accordingly.
- Policy 8: A road vacation may be authorized if the right-of-way is not improved or used for its original purpose. Existing improvements and facility use shall be determined by a report submitted with the road vacation application.
- Policy 9: A road vacation may be authorized to remove excess right-of-way caused by relocation, or at the beginning of a general plan amendment proceeding. Excess right-of-way shall be determined through a report submitted with the road vacation application.
- Policy 10: A road vacation may be approved if there is an agreement to close a public street. A road vacation may be approved with acknowledgment of an impassable street. A road vacation may be approved with a land division map over the area of vacation if the project has comparable methods of vehicular access.
- Policy 11: A road vacation procedure may be used for considering public service easement or utility service easement abandonments. The procedure is the same as any public right-of-way vacation.
- Policy 12: A vacation of improved road right-of-way, or public service easement, should not occur until the lead agency makes findings. One important finding is the land is no longer needed for public use. A vacation of improved road right-of-way, or public service easement, should not occur until the right-of-way is superseded by relocation, and improved to acceptable Kern County Development standards. The Board of Supervisors shall have accepted the replacement facility into the maintained road system.
- Policy 13: A general vacation proceeding (consistent with State of California Streets and Highway Code) will require a public hearing when the vacation affects existing in place facilities or is a project caused by relocating right-of-way.
- Policy 14: A summary vacation shall be consistent with State of California Streets and Highway Code. A summary vacation may be used when the right-of-way does not exist, is unused, or

moved. A summary vacation may be used where right-of-way is impassable, unnecessary for present or prospective public use, or is excess or public service easement land.

Implementation Measures

- Measure A: Kern County should require a research fee to determine if a complex vacation application is acceptable.
- Measure B: In resolving a vacation request, the Board of Supervisors will follow the policies and laws applicable to such vacation request. Before taking final action, the Board of Supervisors may require the applicant to submit additional study(s). Staff shall oversee the applicant's information gathering process and suggest alternatives if necessary.
- Measure C: The Planning Department shall issue guidelines for applicants to use in the preparation of road vacation applications and attendant reports.

2.3.10 Congestion Management Programs

State law requires that urbanized counties prepare an annual congestion management program (CMP). City and county eligibility for new gas tax subventions is contingent upon their participation in the congestion management program. To qualify for funding provided through the State Transportation Improvement Program (STIP) or the Federal Transportation Improvement Program (FTIP), the regional transportation agency must keep current a Regional Transportation Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP has links with air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures (TCMs) to attain, and maintain, the State air quality standard.

Goals

- Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.
- Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.

Policies

- Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated Kern Council of Governments as the County's Congestion Management Agency (CMA).
- Policy 2: The Congestion Management Agency is responsible for developing, adopting, and annually updating a Congestion Management Plan. The Plan is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also Kern Council of Governments), regional transportation providers, local governments, Caltrans, and the air pollution control district.

Implementation Measures

- Measure A: Kern County Council of Governments should request the proper consultation from County of Kern to develop and update the proper congestion management program.
- Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.

2.5.1 Trucks and Highways

The Kern County road network handles a high ratio of heavy truck traffic. State highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

- Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.
- Goal 2: Reduce potential overweight trucks.
- Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.

Policies

- Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.

Kern Council of Governments Congestion Management Program

All urbanized areas with a population larger than 200,000 residents are required to have a Congestion Management System, program, or process. The Kern Council of Governments (Kern COG) refers to its congestion management activities as the Congestion Management Program (CMP). Kern COG was designated as the Congestion Management Agency.

The CMP provides a systematic process for managing congestion and information regarding (1) transportation system performance, and (2) alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet State and local needs. The purpose of the CMP is to ensure that a balanced transportation system is developed that relates population growth, traffic growth and land use decisions to transportation system level of service (LOS) performance standards and air quality improvement. The program attempts link land use, air quality, transportation, advanced transportation technologies as integral and complementary parts of this region's plans and programs.

The purpose of defining the CMP network is to establish a system of roadways that will be monitored in relation to established LOS standards. At a minimum, all State highways and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways. Kern County has 18 designated state highways.

Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern COG and was adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, State, and federal agencies. Included in the 2018 RTP is the Sustainable Communities Strategy (SCS), which is required by California's Sustainable Communities and Climate Protection Act, of Senate Bill (SB) 375. The California Air Resources Board (CARB) set Kern greenhouse gas (GHG) emissions reductions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low-income housing need and transportation planning. Kern COG engaged in the RHNA process concurrently with the development of the 2014 RTP. This process required Kern COG to work with its member agencies to identify areas within the region that can provide sufficient housing for all economic segments of the population and ensure that the state's housing goals are met.

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to: improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape our community's future.

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, state and federal sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP/SCS. These new sources include adjustments to state and federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future state bonding programs and mileage based user fees (Kern COG, 2018).

Kern County Airport Land Use Compatibility Plan (ALUCP)

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses. The nearest public airport is Wasco-Kern County Airport which is located approximately 31 miles to the east of the project site. The project is not located within a designated Airport Land Use Compatibility zone.

4.15.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts to transportation have been evaluated using a variety of resources, including the Traffic Impact Analysis (Stantec, 2021) prepared for the project and attached as Appendix M of this EIR.

Build Year and Cumulative Traffic

As noted above in Section 4.15.2, *Environmental Setting*, primary access to the proposed facility is off King Road, approximately one mile north of the Project Site along an existing unnamed paved road. An access road from King Road to the north boundary of the project site would be constructed as part of the proposed project. In order to project background traffic volumes in the build year, the *Traffic Impact Analysis*, attached at Appendix M, used a similar project for construction trip generation that was scaled to the Azalea Solar project. In order to evaluate the project considering cumulative traffic conditions, a list of projects in the vicinity of the project site was provided by the Kern County Planning Department. Based on the locations and types of projects provided in the cumulative projects list, peak hour turning movement volumes would be calculated and added. It was determined that project traffic generated by cumulative projects located further than six miles from the project site would not have a noticeable effect on traffic conditions at study intersections or roadway segments, and therefore vehicle trips that would be generated by those project were not considered in the cumulative traffic analysis for the proposed project.

Project Trip Generation, Distribution, and Assignment

Traffic accessing the project site is anticipated to come mainly from surrounding population centers such as Lost Hills, Kettleman City, Delano, and Wasco. Project traffic would mainly utilize I-5 via Twisselman Road, King Road and the unnamed paved road off of King Road, one mile north of the project site. I-5 is located approximately 6 miles east of the project site. Additional regional access to the project site would be from State Route 33 which is 6 mile west of the project site.

Construction

Trip generation is defined as the number of vehicle trips produced by a particular type of land use or project. A trip is defined as vehicle movement in one direction. The total number of trips generated by a particular land use type or Project includes both inbound and outbound trips. During construction, truck trips would be routed on I-5. Based on the information provided by the project proponent, upon exiting I-5 at Twisselman Road interchange, construction traffic would access the Project site from Twisselman Road, King Road, and an existing unnamed paved road. Construction is anticipated to start in 2022 and last approximately 12 months, which includes the following phases.

- Phase 1: Site Preparation
- Phase 2: Grading and Earthwork
- Phase 3: Concrete Foundations
- Phase 4: Structural Steel Work

- Phase 5: Electrical/Instrumentation Work
- Phase 6: Collector Line Installation

For the purposes of this analysis, the estimated construction schedule for the Azalea Solar project was based on phased construction trip generation from the Eland 1 Solar Farm Traffic Analysis (See Appendix M). The Eland 1 Solar Farm project, also located in Kern County, is similar in use and setting to the proposed Azalea Solar project. Therefore, construction phase trip generation for the 2,652-acre Eland 1 project was scaled proportionately to obtain estimated construction phase trip generation for the approximately 640-acre Azalea Solar project site. The 2,652 acres Eland 1 solar farm project generates a total of approximately 1,605 passenger car equivalent (PCE) trips. The 640-acre Azalea Solar project is 24 percent smaller in size than Eland 1, therefore, scaling down the Eland 1 trips by the same proportion of 24 percent, the Azalea Solar project would generate approximately 390 PCE trips during the peak month.

The analysis of construction trip generation is based on the average daily volume of construction traffic. The construction period with the highest construction trip generation was found to be during the overlap of phases 2, 3, 4 and 5. The construction trip generation for the project is shown in **Table 4.15-2: Project Trip Generation – Construction**. As shown, the project is expected to generate a total peak PCE volume of approximately 390 ADT.

TABLE 4.15-2: PROJECT TRIP GENERATION – CONSTRUCTION

Phase	Description	Work Days	Month / ADT (PCE)											
			1	2	3	4	5	6	7	8	9	10	11	12
1	Site Preparation	65	38	38	-	-	-	-	-	-	-	-	-	-
2	Grading and Earthwork	90	-	118	118	118	-	-	-	-	-	-	-	-
3, 4, 5	Foundations, Steel, and Electrical	305	-	-	272	272	272	272	272	272	272	272	272	272
6	Collector Line Installation	40	-	-	-	-	-	-	-	-	-	24	24	24
Total		500	38	156	390	390	272	272	272	272	272	296	296	296

Note:

ADT are shown in Passenger Car Equivalents (PCE), PCE Factor = 2.16

Trip generation was scaled based on acreage from Eland 1 Solar Project Draft Supplemental Environmental Impact Report, see Appendix M

Source: Appendix M, Traffic Impact Report, (Stantec, 2021)

During construction, the number of workers on the site would vary daily, with approximately 50 workers per day during non-peak construction, and up to 500 workers per day at the peak of construction. As noted above, detailed worker trip data by phase of construction was referenced from the Eland 1 Solar Project Draft Supplemental Environmental Impact Report and scaled based on the size of the project, resulting in the trip generation estimates (in PCE) shown above.

The project is limited to 150 trips per day per unpaved road to comply with San Joaquin Valley Air Pollution Control District Standards for an unpaved roadway. As shown in the **Table 4.15-2**, the total number of daily trips would typically exceed the 150 trips per day limit. Trip reduction measures, or acceptable access treatments would be required to address the District standards.

Operation and Maintenance

The County's guidelines require that analysis be conducted at intersections where a project would generate 50 or more peak hour trips. Based on information provided by the project proponent, once constructed the solar facility would have up to five full-time employees, and the staff would split work between daytime and nighttime shifts. If all employees work during the day shift, a conservative estimate would be approximately 13 trips per day for the full facility based on an average trip rate of 2.5 trips per employee. The average trip rate of 2.5 trips per employee assumes that employee work during the day/night shift is 2 trips (one trip in and one trip out). Some employees may travel an additional trip in between (e.g., lunch, errand, etc.) as well as occasional deliveries to the site, therefore an average of 2.5 trips per employee is assumed.

During periods when non-routine maintenance or major repairs are in progress, the maintenance staff would typically work nights when the proposed project is not generating power to the grid. In total, the proposed project is expected to generate approximately 13 trips per day and, therefore, would not require additional traffic-related analysis.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on traffic.

A project could have a significant adverse effect on transportation if it would:

- a. Conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows:
 - i. Metropolitan Bakersfield General Plan LOS C, and
 - ii. Kern County General Plan LOS D
- b. Conflict or be inconsistent with *CEQA Guidelines* section 15064.3, subdivision (b);
- c. Substantially increases hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and
- d. Result in inadequate emergency access.

Project Impacts

Impact 4.15-1: The project would conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows: Metropolitan Bakersfield General Plan LOS C and Kern County General Plan LOS "D."

Construction

Construction of the project does not conflict with the County of Kern General Plan, any program plan, ordinance, or policy addressing the circulation system. See Section 3.2 for the Kern County General Plan

and Circulation Element goals.

There would be a limited number of pedestrian and bicycle facilities in the Project area, and these would not be affected by the construction activity except for limited circumstances. The Project would follow County and Caltrans's guidelines for work area traffic control, which includes providing accommodations for pedestrians and bicyclists when applicable. The Project will ensure that traffic controls and other traffic safety measures are in place to maintain proper traffic flow during temporary construction activities. The Project does not propose to amend or adjust roadway classifications, roadway network, transit routes, or bicycle network as identified in the County of Kern General Plan.

As stated above, the project is limited to 150 trips per day per unpaved road to comply with San Joaquin Valley Air Pollution Control District Standards for an unpaved roadway. As shown in the **Table 4.15-2**, the total number of daily trips would typically exceed the 150 trips per day limit. To address construction trips per day and to ensure compliance with the San Joaquin Valley Air Pollution Control Districts Standards, mitigation measures MM 4.15-1 and MM 4.15-2 would be implemented. With the inclusion of these mitigation measure impacts would be less than significant in this regard.

Intersection LOS

The proposed project is not located in or near the metropolitan Bakersfield area. An analysis was done to determine the intersection LOS during the construction phase of the proposed project,. The guidelines in the Caltrans publication *Guide for the Preparation of Traffic Impact Studies* (December, 2002), states that a facility is required to be analyzed when a project will generate more than 100 peak hour trips at a facility operating above a LOS C. While the proposed project would generate more than 100 peak hour trips at some of the study intersections, the scope also took into account the routes used to access the project site, by construction workers, vendors, haul trucks, and water trucks, and the intersections where the project traffic would be concentrated.

Table 4.15-3: Existing Plus Construction Traffic LOS of Study Segments , shows the results of the analysis for existing conditions plus project-generated construction traffic. Project generated construction traffic was added to existing conditions to represent existing plus project conditions. Similar to the analysis of the existing traffic conditions, the existing plus construction conditions for the roadway segments were evaluated based on Kings County's LOS threshold volumes that represent Allowable Daily Service Volume LOS criteria by Roadway Segment (See Appendix M). The roadway capacities were compared to the existing plus construction traffic volumes. As shown in **Table 4.15-3**, all the roadway segments continue to operate at LOS A or B even with addition of construction traffic and are below the County and Caltrans target threshold of LOS D.

TABLE 4.15-3: EXISTING PLUS CONSTRUCTION TRAFFIC LOS OF STUDY SEGMENTS

Roadway Segment	Roadway Type	Allowable Daily Service Volume (LOS C)	ADT	LOS
1. King Road north of Twisselman Road	Two-Lane Facility	13,800	1,623	LOS A
2. Twisselman Road east of King Road	Two-Lane Facility	13,800	1,502	LOS A
3. Twisselman Road west of King Road	Two-Lane Facility	13,800	1,260	LOS A
4. I-5 n/o junction SR 46	4-Lane Freeway	55,200	38,390	LOS B
5. I-5 n/o Twisselman Road	4-Lane Freeway	55,200	38,390	LOS B
6. I-5 s/o Twisselman Road	4-Lane Freeway	55,200	38,390	LOS B

Note: ADT = Average Daily Traffic, LOS = Level of Service, SR = State Route

SOURCE: Stantec, 2021, Appendix M

Summary of Construction LOS Impacts

As shown above the construction associated with the proposed project would not result a LOS below King's County LOS threshold volumes, Kern County's LOS thresholds, or Caltrans thresholds. and the proposed project would not result in significant impacts. To further reduces impacts Mitigation Measures MM 4.15-1 and MM 4.15-2 would be included.

Operation and Maintenance

As noted previously, the proposed project is expected to generate up to five full-time employees. Staff would split work between daytime and nighttime shifts. If all employees work during the day shift, a conservative estimate would be approximately 13 trips per day for the full facility based on an average trip rate of 2.5 trips per employee. The County's guidelines require that analysis be conducted at intersections where a project would generate 50 or more peak hour trips. Therefore, an analysis of LOS conditions for project operation and maintenance was not conducted, and the impact is presumed to be less than significant.

Decommissioning

Decommissioning of the proposed project would result in impacts similar to those caused by the project construction traffic, but the duration would be about one-third less than project construction (approximately four months). Therefore, decommissioning of the project would result in a less than significant impact with respect to LOS for roadways.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The PG&E gen-tie connection would require construction and would be operated within the existing PG&E Arco Substation. The construction and operation of the PG&E Interconnection Facilities would include the modification of the Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The gen-tie line and access road would not conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

Mitigation Measures

MM 4.15-1: Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall implement measures to ensure peak hour construction worker vehicle limits are maintained during the AM and PM peak hours in order to maintain LOS D or better at the study intersections. These measures may include, but are not limited to the following:

The Construction Traffic Control Plan (see MM 4.15-2, below) shall outline the methods used to count worker vehicle traffic arriving and departing from the project site during peak AM and PM hours, methods used to control the number of trips during these hours, and documentation of reasonable coordination efforts with other projects in the area to avoid impacts to study intersections.

The Construction Traffic Control Plan shall outline methods to limit construction related traffic trips to 150 trips per day or less on unpaved roads per the standards of the San Joaquin Valley Air Pollution Control District.

- a. The project proponent/operator shall limit construction worker vehicle trips to and from the site to the extent possible during the AM and PM peak periods (i.e., 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.).
- b. If monitoring indicates that either AM or PM peak hour construction trips may exceed the peak hour construction worker vehicle limits, the project proponent/operator shall implement measures to reduce peak hour passenger vehicle trips. These measures could include:
 - i. Scheduling construction worker shifts so that a majority of the workers arrive and depart the project site outside the AM and PM peak periods.
 - ii. Staggering construction worker shifts so that construction worker vehicle trips are distributed over a broader period (i.e., construction workers arrive in staggered shifts starting from 6:00 a.m. and depart in staggered shifts starting from 2:00 p.m.).
 - iii. Instituting incentives and providing options for construction workers to carpool and/or vanpool to and from the project site.

MM 4.15-2: Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall:

- a. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 6, as appropriate, for approval. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following issues:
 - i. Timing of deliveries of heavy equipment and building materials. To the extent feasible, restrict deliveries and vendor vehicle arrivals and departures during either the AM and PM peak periods;

- ii. Directing construction traffic with flaggers along the project construction Corridor;
 - iii. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;
 - iv. Ensuring access for emergency vehicles to the project sites;
 - v. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;
 - vi. Maintaining access to adjacent property;
 - vii. Specifying both construction-related vehicle travel and oversize load haul routes and avoiding residential neighborhoods to the maximum extent feasible; and
 - viii. Consult with the County to develop coordinated plans that would address construction-related vehicle routing and detours adjacent to the construction area for the duration of construction overlap with neighboring projects. Key coordination meetings would be held jointly between applicants and contractors of other projects for which the County determines impacts could overlap.
- b. Obtain all necessary encroachment permits for the work within the road right-of-way or use of oversized/overweight vehicles that will utilize county maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department, the Kern County Public Works Department-Development Review, and Caltrans.
 - c. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County.
 - d. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.15-1 and MM 4.15-2, impacts would be less than significant. Impacts would be less than significant for the Arco Substation connection with PG&E's standard best management practices, no mitigation would be required.

Impact 4.15-2: The project would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards developed by the county congestion management agency for designated roads or highways.

The new *CEQA Guidelines* section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the *CEQA Guidelines* criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas, and shifts the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. Kern County is currently engaged in this process and have not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the County, guidance from the State of California Office of Planning and Research's (OPR) December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Guidelines), was relied upon in this EIR to determine the significance of transportation impacts (OPR, 2018).

Impacts due to construction activities would be temporary and would not result in any meaningful long-term or permanent change in VMT; therefore, the evaluation of VMT is focused on project operation. As defined in *CEQA Guidelines* section 15064.3, subdivision (a), VMT refers to the amount and distance of automobile travel attributable to a project. The Technical Guidelines further explain that the automobile in section 15064.3 “refers to on-road passenger vehicles, specifically cars and light trucks.” For this reason, this VMT analysis only considers passenger vehicle (i.e., cars and light trucks) trips generated by the project. However, this EIR also includes an analysis of GHG emissions associated with heavy truck traffic generated by the project (as well as other traffic), and addresses potential significant transportation impacts of all project vehicles, including heavy trucks, related to air quality, noise, and safety.

The Technical Guidelines provide a screening criterion that could be used to determine if VMT analysis is warranted for small projects, which are defined as projects that would generate fewer than 110 trips per day and may generally be assumed to cause a less-than-significant transportation impacts. As indicated above a conservative estimate of the Project's daily trip generation is approximately 13 trips per day for the full facility based on an average trip rate of 2.5 trips per employee. Therefore, the Project would generate substantially fewer than the 110-trip-per-day threshold and can be assumed to cause a less-than-significant transportation impact.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation, and access road would not conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project and the Arco Substation connection.

Impact 4.15-3: The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

During construction, the Project will comply with the County of Kern's Traffic Control Plan Requirements for work area traffic control for work performed in the County's right-of-way. During construction, the project would require the delivery of heavy construction equipment and PV solar components using area roadways, some of which may require transport by oversize vehicles. Heavy equipment associated with these components would not be hauled to/from the site daily, but rather would be hauled in and out on an as-needed basis. The existing unnamed paved road leading to the project site would include minor improvements and alterations to meet current standards for a 20-foot wide access road for approximately 2.2 miles.

The project would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the roadways surrounding the project site. Chain-link security fencing would be installed around the perimeter of the facilities and other areas requiring controlled access, prior to commencement of construction, in order to restrict public access during construction and operations. Additionally, the project would not include the development of sharp curves, dangerous intersections or other hazardous design features. The project would be set back from the roadways as required by Kern County Zoning Ordinance. Additionally, the need for and number of escorts, California Highway Patrol escorts, as well as the timing of transport, would be at the discretion of Caltrans and Kern County, and would be detailed in respective oversize load permits. Thus, potential impacts would be reduced to a less-than-significant level.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities would include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The construction and operation of the Arco Substation connection does not propose any improvements that could substantially increase hazards due to geometric design. The existing unnamed paved road leading to the project site would include minor improvements and construction of a new 20-foot wide access road for approximately 2.2 miles. These improvements would not create any increased hazards due to geometric design.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant for the project and Arco Substation connection.

Impact 4.15-4: The project would result in inadequate emergency access.

Construction of the project will not result in inadequate emergency access. Development of the project site will not alter or impede emergency response routes or plans set in place by the County. In regard to site emergency access, the project driveways are designed to comply with turning radius requirements for emergency vehicles and will not cause hazardous driving conditions. The existing unnamed paved road leading to the project site would include minor improvements and alterations to meet current standards for a 20-foot wide access road for approximately 2.2 miles. The project's detailed design will be completed in compliance with California Fire Code requirements and not impair emergency vehicle access in the vicinity of the project during construction and in ongoing operation. Compliance with the California Fire and Building Codes will be mandated through the plan check and approval process. This process will also ensure that adequate access for emergency services is provided, and the County's emergency response plan will be upheld during construction. As no non-compliant features are proposed, the impact is considered to be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities would include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. As discussed above, the access road would be constructed to connect the project site to King Road. These improvements would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the surrounding roadways with implementation of mitigation measures.

Mitigation Measures

No Mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant for the project and the Arco Substation connection.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts from the project, when considered with nearby, reasonably foreseeable planned projects, would occur only during project construction because project operation traffic would be very minimal. As stated above in the evaluation of operational impacts, there would be minimal trip generation once construction activities have concluded. Therefore, operation of the project would result in less-than-significant cumulative impacts.

The potential for cumulative construction impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules that could affect similar resources. Cumulative conditions have been considered, as construction of other developments in the vicinity during the same construction

timeframe as the proposed project could have a temporary negative cumulative impact on traffic conditions. Current environmental documents listed on the Kern County website were reviewed to ascertain their distance from the project and whether they would be constructed in a similar timeframe. See Appendix M for the list provided by the County. This review returned one project within a 6-mile radius, with the closest planned project that could result in a cumulative transportation or traffic impact being located adjacent to the project site. Cumulative impacts from the proposed project, when considered with nearby, reasonably foreseeable planned projects, would occur only during project construction because project operation traffic would be minimal. As stated above in the evaluation of operational impacts, there would be minimal trip generation once construction activities have concluded. Therefore, operation of the project would result in less-than-significant cumulative impacts. The potential for cumulative construction impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules that could affect similar resources. The analysis of traffic conditions in Impact 4.14-1 includes project construction traffic in combination with traffic that would be generated by cumulative projects. On this basis it is assumed there will be no additional traffic impacts under cumulative conditions and impacts would be less than significant. On a project level basis, mitigation measures MM 4.15-1 and MM 4.15-2 would be included to further reduce construction related impacts. These mitigation measures would also ensure the project's cumulative contribution to transportation impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities, including improvements for the existing Arco Substation. The gen-tie line to the Arco Substation would be extended westerly from the project boundary to the Arco Substation and the access road would be extended from the northerly project boundary to King Road. Additionally, new interconnection related components including the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill would not result in a cumulative transportation impact.

Mitigation Measures

Implement Mitigation Measures 4.15-1 and 4.15-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.15-1 and 4.15-2, cumulative impacts would be less than significant. Cumulative impacts would be less than significant for the connection to Arco Substation and substation improvements. As such, no mitigation would be required.

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Section 4.16

Tribal Cultural Resources

4.16.1 Introduction

This section provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the proposed project. The analysis in this section is based on the results of the Native American consultation conducted by the County for purposes of compliance with Senate Bill 18 (SB 18) and CEQA requirements prompted by Assembly Bill 52 (AB 52).

This section is also primarily based on the Phase 1 *Archaeological Survey Addendum Report* prepared for the proposed project by Surf to Snow Environmental Resource Management, Inc. (S2S) (July 2021; Appendix F), which details the results of a cultural resources records search and field survey for the project. Due to the confidential nature of the location of tribal cultural resources, information regarding location of cultural resources has been redacted from the report and is not included in the Appendix.

4.16.2 Environmental Setting

Refer to Section 4.5, *Cultural Resources*, of this EIR for a greater discussion of the tribal cultural resources environmental setting.

Existing Tribal Cultural Resources

Native American Outreach

As noted in Appendix F, *Archaeological Survey Addendum Report*, a Local Government Tribal Consultation List Request was submitted to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands File as it encompasses the project area on June 9, 2021. The NAHC, responded to the request on June 30, 2021 and noted that the search was negative and failed to reveal the presence of known Native American resources within the project area. The NAHC also provided a list of 18 tribal representatives or individuals with potential interest in and knowledge of Kern and Kings Counties and the project vicinity. All individuals on that list were contacted by via certified letter on July 8, 2021.

On July 13, 2021, project letters and vicinity map via email was submitted to 16 of the 18 contacts on the Native American Contact List provided by the NAHC; contact information for two individuals on the contact list did not include an email address. Of the 16 emails sent, two were undeliverable, as those email addresses were invalid. On July 16, 2021, follow up phone calls were made to 16 of the 18 contacts on the Native American Contact List provided by the NAHC. Phone contact was made with Ms. Vera of the Tule River Indian Tribe, who indicated she was the correct point of contact and that additional outreach to the tribal chairperson and tribal archaeologist on the NAHC contact list was unnecessary. See **Table 4.16-1: Native American Outreach** below for further details.

TABLE 4.16-1: NATIVE AMERICAN OUTREACH

Organization	Contact	Phone/Email	Letter Sent	Follow-up	Comments
Big Pine Paiute Tribe of Owens Valley	Ms. Danelle Gutierrez, THPO PO Box 700 Big Pine, CA 93513	(760) 938-2003, ext. 228 d.gutierrez@bigpinpaiute.org	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed, and a voicemail left when no connection was made.
Big Pine Paiute Tribe of Owens Valley	Ms. Sally Manning, Environmental Director PO Box 700 Big Pine, CA 93513	(760) 938-2003 s.manning@bigpinpaiute.org	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed. The voicemail box was full and so a message could not be left.
Big Pine Paiute Tribe of the Owens Valley	Mr. James Rambeau, Sr., Chairperson P.O. Box 700 Big Pine, CA 93513	(760) 938-2003 j.rambeau@bigpinpaiute.org	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed. The voicemail box was full and so a message could not be left.
Chumash Council of Bakersfield	Mr. Julio Quair, Chairperson 729 Texas Street Bakersfield, CA 93307	(661) 322-0121 chumashtribe@sbglobal.net	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. Email was undeliverable due to unfound email address. A follow up phone call was placed. The call was not answered and there was no option to leave a message.

Organization	Contact	Phone/Email	Letter Sent	Follow-up	Comments
Kern Valley Indian Community	Ms. Brandy Kendricks 30741 Foxridge Court Tehachapi, CA 93561	krazykendricks@hotmail.com (661) 821-1733 (661) 972-0445	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed, and a voicemail left when no connection was made.
Kern Valley Indian Community	Mr. Robert Robinson, Chairperson P.O. Box 1010 Lake Isabella, CA 93240	(760) 378-2915 Cell bbutterbredt@gmail.com	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed, and a voicemail left when no connection was made.
Kern Valley Indian Community	Ms. Julie Turner, Secretary P.O. Box 1010 Lake Isabella, CA 93240	(661) 340-0032 Cell	7/9/2021	7/16/2021 (phone)	No Email address provided by NAHC. A follow up phone call was placed, and a voicemail left when no connection was made.
Kitanemuk & Yowlumne Tejon Indians	Ms. Delia Dominguez, Chairperson 115 Radio Street Bakersfield, CA 93305	(626) 339-6785 2deedominguez@gmail.com	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed, and a voicemail left when no connection was made.
Salinan Tribe of Monterey, San Luis Obispo Counties	Patti Dutton, Tribal Administrator 7070 Morro Road, Suite A Atascadero, CA, 93422	(805) 464-2650 info@salinatribes.com	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed. A message played, but no message could be left.
Santa Rosa Rancheria Tachi Yokut Tribe	Mr. Leo Sisco, Chairperson P.O. Box 8	(559) 924-1278	7/9/2021	7/16/2021 (phone)	No Email address provided by NAHC. A follow up phone call was placed, and a voicemail left when no connection was

Organization	Contact	Phone/Email	Letter Sent	Follow-up	Comments
	Lemoore, CA 93245				made. Phone call was returned by Leland McGee, who communicated that Cultural Director Shayna Powers was the appropriate contact at the tribe. A phone call to Ms. Powers was placed, and voicemail was left when contact was not made.
Tejon Indian Tribe	Mr. Octavio Escobedo III, Chairperson P.O Box 640	(661) 834-8566 oescobedo@tejoni ndiantribe-nsn.gov	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed. The call was not answered and there was no option to leave a message.
Tejon Indian Tribe	Mr. Colin Rambo, CRM Technician PO Box 640 Arvin, CA 93203	(661) 834-8566 (484) 515-4790 cell colin.rambo@tejo nindiantribe- nsn.gov	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed, and a voicemail left when no connection was made. Mr. Rambo followed up via email and requested that we talk on the phone the following week.
Tule River Indian Tribe	Mr. Neil Peyron, Chairperson PO Box 589 Porterville, CA 93258	(559) 781-4271 neil.peyron@tuleri vertribe-nsn.gov	7/9/2021	7/13/2021 (email)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. No follow up phone call was made, per guidance from Ms. Vera, as described below.
Tule River Indian Tribe	Kerri Vera, Environmental Department	(559) 783 - 8892	7/9/2021	7/13/2021 (email)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request

Organization	Contact	Phone/Email	Letter Sent	Follow-up	Comments
	P. O. Box 589 Porterville, CA, 93258	kerri.vera@tuleriv ertribe-nsn.gov		7/16/2021 (phone)	feedback/solicit any questions. A follow up phone call connected with Ms. Vera, who confirmed that she had received the email and would review in the next few days. She also confirmed that she was the best point of contact for the project, and there was no need to follow up with the Chairperson or others at the Tribe.
Tule River Indian Tribe	Joey Garfield, Tribal Archaeologist P. O. Box 589 Porterville, CA, 93258	(559) 783 - 8892 joey.garfield@tule rivertribensn.gov	7/9/2021	7/13/2021 (email)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. Email was undeliverable due to unfound email address. No follow up phone call was made, per guidance from Ms. Vera, as described above.
Xolon-Salinan Tribe	Karen White, Chairperson P. O. Box 7045 Spreckels, CA, 93962	(831) 238 - 1488 xolon.salinan.herit age@gmail.com	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed, and a voicemail left when no connection was made.
Xolon-Salinan Tribe	Donna Haro, Tribal Headwoman P. O. Box 7045 Spreckels, CA, 93962	(925) 470 - 5019 dhxolonaakletse@ gmail.com	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. A follow up phone call was placed to Ms. Haro, who shared that Chairperson White would in time formally respond via email or letter, and that the content of that response would confirm that the project area is within the Tribe's aboriginal territory, along a

Organization	Contact	Phone/Email	Letter Sent	Follow-up	Comments
					boundary between their Tribe and the Yokuts. Further, there are no known sensitive sites in the vicinity, but would appreciate being notified if any prehistoric sites are discovered through project implementation.
yak tityu tityu yak tilhini – Northern Chumash Tribe	Mona Tucker, Chairperson 660 Camino Del Rey Arroyo Grande, CA, 93420	(805) 748 - 2121 olivas.mona@gmail.com	7/9/2021	7/13/2021 (email) 7/16/2021 (phone)	Surf to Snow (S2S) sent a follow-up email to digitally share the letter and to request feedback/solicit any questions. Placed a follow up phone call, during which Ms. Tucker indicated this project was too far from their ancestral territory to provide information about resources in the area, and the Tejon Tribe should be contacted instead.

Native American SB 18 and AB 52 Consultation

As indicated in Phase 1 *Archaeological Survey Addendum Report* for the project (Appendix F), a Sacred Lands File (SLF) search through the NAHC did not identify sacred sites or tribal cultural resources in the project vicinity.

As part of the County's government-to-government responsibilities pursuant to AB 52, on October 14, 2020, the County sent consultation notification letters via certified mail to five California Native American tribal contacts on the County's Master List for AB 52 consultation. Results of the outreach are shown in **Table 4.16-2: AB 52 and SB 18 Native American Consultation**. To date, there has been no responses requesting formal consultation pursuant to AB 52 and SB 18.

TABLE 4.16-2: AB 52 AND SB 18 NATIVE AMERICAN CONSULTATION

Contact	Tribe	Legal Requirement	Date of Letter	Response
Anthony Madrigal, Jr., Tribal Grants Administrator 46-200 Harrison Place Coachella, CA 92236	Twenty-Nine Palms Band of Mission Indians	AB 52	October 14, 2020	No response
Darrell Mike, Tribal Chairman 46-200 Harrison Place Coachella, CA 92236	Twenty-Nine Palms Band of Mission Indians	AB 52	October 14, 2020	No response
Michael Mirelez, Cultural Resources Coordinator P.O. Box 1160 Thermal, CA 92274	Torres Martinez Desert Cahuilla Indians	AB 52	October 14, 2020	No response
Jessica Mauck, Cultural Resources Analyst 26569 Community Center Drive Highland, CA 92346	San Manuel Band of Mission Indians	AB 52	October 14, 2020	No response
Collin Rambo, Cultural Resource Management Technician, 1731 Hasti Acres Dr., Suite 108 Bakersfield, CA 93309	Tejon Indian Tribe	AB 52	October 14, 2020	No response

4.16.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

Native American Heritage Commission

Public Resources Code (PRC) Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the PRC specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Assembly Bill 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerry “Jerry” Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR) or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the *CEQA Guidelines*, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency’s formal notification and the lead agency must begin consultation within 30 days of receiving the tribe’s request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project’s impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or

if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Senate Bill 18

Senate Bill 18 (SB 18) (Statutes of 2004, Chapter 905), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to “provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places” (Governor’s Office of Planning and Research, 2005).

The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (Governor’s Office of Planning and Research, 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government’s jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county’s jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

Local

There are no applicable local regulations for this issue area.

4.16.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts to tribal cultural resources have been evaluated using a variety of resources, including an SLF search conducted by the NAHC. SB 18 and AB 52 notification letters were sent to Native American groups and individuals indicated by the NAHC to solicit information regarding the presence of tribal cultural resources. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on tribal cultural resources.

A project would have a significant impact on tribal cultural resources if it would:

- 1) 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:
 - a) 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
 - b) 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.

Project Impacts

Impact 4.16-1a: The project would 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 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).

To date, there has been no responses requesting formal consultation pursuant to AB 52 and SB 18. Based on the records search results, field survey, and NAHC Sacred Lands File, appears to have a low sensitivity for prehistoric/Native American cultural resources. The majority of resources are expected to be isolated artifacts rather than archaeological sites. Nonetheless, the project could impact previously unknown and buried archaeological deposits that have the potential to qualify as historical resources. Buried archaeological sites may be encountered during project-related excavation. In the event that unknown archaeological resources that qualify as historical resources are discovered during project construction, significant impacts could occur. Mitigation Measures MM 4.5-1 through MM 4.5-4 would require cultural resources sensitivity training for construction workers, implementation of avoidance measures should prehistoric archaeological resources or sites be inadvertently located, archaeological monitoring during construction, and appropriate treatment of unearthed human remains. Implementation of these measures would reduce impacts to unknown resources to less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

Potential impacts to tribal cultural resource within these areas would be minimal. As discussed above, there is no indication that either of these routes would have a high sensitivity for the presence of these resources. Both areas have been heavily disturbed and surrounding areas and not revealed a significant number of finds. In addition, MM 4.5-1 through MM 4.5-4 would be applied during construction of the gen-tie line and access road. Impacts would be less than significant.

The construction, decommission, and operation of the PG&E Interconnection Facilities for the transport of renewable energy is expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area and are not anticipated to result in impacts on tribal cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through 4.5-4, see Section 4.5, *Cultural Resources*.

Level of Significance

With implementation of Mitigation Measures MM 4.5-1 through 4.5-4, see Section 4.5, *Cultural Resources*, impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Impact 4.16-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources 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 that is 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.

As identified within Appendix F, the following was investigated for the project site a review of environmental, ethnographic, prehistoric, and historic period data, Native American outreach, and an intensive pedestrian survey. A request for records search and literature review was submitted through the California Historical Resources Information System (CHRIS) at the Southern San Joaquin Valley Information Center (SSJVIC). The record search revealed no prehistoric or historic period cultural resources within the Project Area. Additionally, the Appendix F, *Phase 1 Archaeological Survey Addendum Report* completed a Native American Communication and Sacred Land database search. The review of the Native American Heritage Commission's (NAHC) Sacred Land database was negative. Appendix F also identified outreach out to 18 Native American tribal contacts identified by the NAHC via certified mail on 7/9/2021, and by email on 7/13/2021. On June 29th, 2021, Surf to Snow personnel completed an intensive pedestrian survey of the Project Access Road. The survey yielded negative results for the presence of cultural resources. Based on the results of the records search, contact with the NAHC and Native American tribal representatives, the pedestrian survey, a review of archival and environmental data, the project would not cause a substantial adverse change in the significance of a tribal resource and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

Potential impacts to tribal cultural resources within these areas would be minimal. As discussed above, there is no indication that the access road would be in a sensitive location for the presence of these resources. The access road has been heavily disturbed, and the surrounding areas have not revealed a high potential to contain these resources. In addition, MM 4.5-1 through MM 4.5-4 would be applied during construction of the gen-tie line and access road. Impacts would be less than significant.

The construction, decommission, and operation of the PG&E Interconnection Facilities for the transport of renewable energy is expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area and are not anticipated to result in impacts on tribal cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through 4.5-4, see Section 4.5, *Cultural Resources*.

Level of Significance

With implementation of Mitigation Measures MM 4.5-1 through 4.5-4, see Section 4.5, *Cultural Resources*, impacts would be less than significant for the project. Impacts would be less than significant for the PG&E Interconnection Facilities with PG&E's standard best management practices and APMs, and no mitigation would be required for the PG&E Interconnection Facilities.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the project discussed

in Chapter 3, *Project Description*, of this EIR, would have on tribal cultural resources. The geographic area of analysis for tribal cultural resources includes a 6 mile radius from the project site. This geographic scope of analysis is appropriate because the resources within this area are expected to be similar to those that occur on the project area because of their proximity, their similarities in environments and landforms, and their location within the same Native American tribal territories. This is a large enough area to encompass any effects of the project on tribal cultural resources that may combine with similar effects caused by other projects and provides a reasonable context wherein cumulative actions could affect tribal cultural resources.

Multiple projects, including solar energy production facilities, are proposed throughout the San Joaquin Valley. Cumulative impacts to tribal cultural resources could occur if other related projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, when considered together, would be significant.

Potential impacts of the project to tribal cultural resources, in combination with other projects in the area, could contribute to a cumulatively significant impact due to the overall loss of resources unique to the region. As discussed above there were no known or identified tribal cultural resources on the project site. With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4, no tribal cultural resources are anticipated to be impacted as a result of project implementation and the project would not have a cumulatively considerable contribution to impacts to tribal cultural resources.

PG&E Arco Substation Modification and Electric Transmission Interconnection

Potential impacts to tribal cultural resources within these areas would be minimal. As discussed above, there is no indication that the access route would be in locations sensitive for the presence of these resources. Both routes have been heavily disturbed, and the surrounding areas have not revealed a high potential to contain these resources. In addition, MM 4.5-1 through MM 4.5-4 would be applied during construction of the gen-tie line and access road. Impacts would be less than significant.

The construction, decommission, and operation of the PG&E Interconnection Facilities for the transport of renewable energy is expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area and are not anticipated to result in impacts on tribal cultural resources. PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction, decommission, and operation, including those regulations that relate to tribal cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through 4.5-4, see Section 4.5, Cultural Resources.

Level of Significance

With implementation of Mitigation Measures MM 4.5-1 through 4.5-4, see Section 4.5, Cultural Resources, cumulative impacts would be less than significant for the project. Cumulative impacts would be less than significant for the PG&E Interconnection Facilities and no mitigation would be required for the PG&E Interconnection Facilities.

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Section 4.17

Utilities and Service Systems

4.17.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project pertaining to demand for operational utilities (water supply, stormwater, electricity, natural gas, telecommunications, and solid waste disposal). This section describes existing infrastructure and levels of service and evaluates whether any improvements would be necessary to accommodate the project. The information and analysis in this section is based on the project-specific *Azalea Solar Project Hydrology and Water Quality Study* (S2S Environmental Resources, 2021), and the *Azalea Solar Project Water Supply Assessment* (S2S Environmental Resources, 2022) included in Appendix J and Appendix K of this EIR, respectively.

4.17.2 Environmental Setting

Water Supply

There are typically three sources of supply water for development: (1) natural sources; (2) manmade sources; and (3) reclamation. Natural sources include rivers, lakes, streams, and groundwater stored in aquifers. Manmade sources include runoff water that is treated and stored in reservoirs and other catchment structures. Reclaimed water is wastewater that has been conveyed to a treatment plant and then treated to a sufficient degree that it may again be used for certain uses, such as irrigation. However, reclaimed water is not potable (drinkable) and must be conveyed in a separate system in order to ensure that there is no possibility of direct human consumption.

Groundwater Supply

The project site is located in the Tulare Lake Hydrologic Region, and specifically in the San Joaquin Valley Groundwater Basin within the Kern County Subbasin. The Kern County Subbasin is primarily fed from stream seepage along the eastern subbasin and the Kern River; recharge of applied irrigation water, however, is the largest contributor. Total water storage within the Kern County subbasin is reported to be in the range of 40 million acre-feet. The Kern County Subbasin covers about 3,040 square miles and is bounded on the north by the Kern County line and the Tule Groundwater subbasin, on the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi mountains, and on the southwest and west by the marine sediments of the San Emigdio Mountains and Coast Ranges. Groundwater has been and is an important resource within the subbasin given limits on the available local and imported surface water supply.

The project site is located within the boundaries of the Kern County Water Agency (KCWA). KCWA is a local contracting entity with the California Department of Water Resources (DWR) and holds contracts for State Water Project (SWP) water. Through these contracts, KCWA delivers water to smaller agencies within its boundaries. Among these smaller agencies is the Westside Water District Authority (WDWA) that operates under the KCWA and uses water allocated by KCWA. In sum, there are 13 local water districts

or member units that the KCWA delivers water to. One of these water districts is the Westside Water District (WDWA), which itself is comprised of four smaller water districts including the Lost Hills Water District (LHWD), Berrenda Mesa Water District, Belridge Water Storage District, and Dudley Ridge Water District. The project site, however, is outside the service boundaries of these four smaller districts, with the (LHWD) being the closest, adjacent to the south and east. Because of this, water will be supplied to the project by the WDWA. The WDWA Management Area includes 227,193 acres and consists of the portion of the Kern Subbasin located within the service area of the Chapter member Water Districts. Water supplied by WDWA is provided in accordance with a Groundwater Sustainability Plan (GSP) for the Kern Subbasin.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires the formation of local-controlled groundwater sustainable agencies in high- and medium-priority groundwater basins. These groundwater sustainability agencies are responsible for developing and implementing a Groundwater Sustainability Plan (GSP) to ensure the basin is operated within its sustainable yield without causing undesirable results. The project is located within the Tulare Lake Hydrologic Region, San Joaquin Valley Groundwater Basin, and the Kern County Subbasin. The Kern County Subbasin is ranked as high priority and identified as being subject to critical overdraft conditions under SGMA. The Kern Groundwater Authority Groundwater Sustainability Agency (GSA) was formed in order to comply with SGMA. The Kern Groundwater Authority GSA, which constitutes of 16 member entities made up of water districts/agencies, groundwater banking projects, and organized non-districted lands.

Wastewater

The Kern Sanitation Authority (KSA) provides maintenance and wastewater service for Kern County. As the project site is currently utilized as agricultural land, local sewer infrastructure is not currently available on-site. As designed the project would not require connection to any septic systems or sewer infrastructure. Instead temporary, portable restroom facilities will be provided during construction, decommissioning and operations. Such restroom facilities would be onsite during the construction phase, and would accommodate the limited number of employees with access to the facility. All employees would have access to the portable toilets and portable hand washing facilities, which would be serviced by truck rather than utilizing septic system(s).

Stormwater Drainage

As described in **4.10, *Hydrology and Water Quality***, of this EIR, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure. The project is in the Tulare Lake Watershed, specifically within the Kettleman Plain Sub-Watershed. Most of the rainfall in the project area occurs between November and April when the Gulf Stream shifts southward from northern latitudes. This shift creates a quasi-permanent low-pressure zone over southern California and feeds moisture originating over the Pacific Ocean into the region. This southern shift creates the Mediterranean climate characteristic of southern California.

Water moves through the project site via sheet flow at a low flow rate. Elevations range from roughly 462- feet above mean sea level at the southwest corner of the project area, to roughly to 584-feet above mean sea level at the northeast corner of the project area. The land generally slopes gently from the northeast

towards the southwest throughout with the exception of a small hill in the southerly portion of the project site. Runoff from the project site drains to the south and eventually east toward the California Aqueduct. The topography is such that runoff will not likely reach the aqueduct as most rainfall infiltrates into the immediate surrounding soils quickly.

There are no existing stormwater drainage systems on the project site, and no stormwater drainage infrastructure is proposed as part of the project. As discussed, the existing site surface runoff flows generally in the southern direction based on the existing contours and drainage on the site after installation of the project rainfall and runoff is anticipated to follow a similar drainage pattern.

Solid Waste

Solid waste generally refers to garbage, refuse, sludge, and other discarded solid materials that come from residential, industrial, and commercial activities. Construction, demolition, and inert wastes are also classified as solid waste. Such wastes include nonhazardous building materials such as asphalt, concrete, brick, drywall, fencing, metal, packing materials, pallets, pipe, and wood. The general waste classifications used for California waste management units, facilities, and disposal sites are outlined below. Nonhazardous solid waste consists of organic and nonorganic solid, semi-solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes, and other discarded waste, provided that such wastes do not contain hazardous materials or soluble pollutants in concentrations that would exceed applicable water quality objectives or cause a degradation of waters of the State.

California State law regulates the types of waste that can be disposed of at the different classes of landfills. Class I landfills may accept hazardous and nonhazardous wastes. Class II landfills may accept designated and nonhazardous wastes, and Class III landfills may accept nonhazardous wastes.

Kern County is responsible for meeting the California Integrated Waste Management Act of 1989 (AB 939). AB 939 required cities and counties to reduce the amount of solid waste being sent to landfills by 50 percent by January 1, 2000. It also required cities and counties to prepare solid waste planning documents. These documents include the Source Reduction and Recycling Element (SRRE), the Hazardous Waste Element (HHWE), and the Nondisposal Facility Element (NDFE). All three of these documents, as well as the Integrated Waste Management Plan, approved February 1998 by the California Integrated Waste Management Board, have been approved for Kern County. The Kern County Integrated Waste Management Plan is the long-range planning document for landfill facilities.

Construction and demolition (C&D) waste is heavy, inert material. This material creates significant problems when disposed of in landfills. Because C&D waste is heavier than paper and plastic, it is more difficult for counties and cities to reduce the tonnage of disposed waste. For this reason, C&D waste has been specifically targeted by the State of California for diversion from the waste stream. Projects that generate C&D waste should emphasize deconstruction and diversion planning rather than demolition. Deconstruction is the planned, organized dismantling of a prior construction project, which allows maximum use of the deconstructed materials for recycling in other construction projects and sends a minimum amount of the deconstruction material to landfills.

Approved on October 6, 2011, AB 341 intended to promote recycling and diversion of solid waste from landfills by requiring businesses to accomplish recycling activities and/or participate in recycling programs.

The Waste Operations Division of the Kern County Public Works Department administers or sponsors the following recycling programs, which contribute toward meeting State-mandated solid waste diversion goals:

- Recycling programs at landfills to recycle or divert a wide variety of products, such as wood waste, cathode ray tubes, tires, inert materials, appliances, etc.;
- Drop-off recycling centers for household recyclables. The County- and the City-operated drop-off recycling centers, which are located in the unincorporated metropolitan area and the city, may be used by both County and city residents;
- Financial assistance for operation of the City of Bakersfield Green Waste Facility;
- The Kern County Special Waste Facility for the disposal of household hazardous waste. Services are provided to all Kern County residents;
- Semi-annual “bulky waste” collection events, which are held in the Bakersfield area and available to both County and city residents (co-sponsor);
- Christmas tree recycling campaign (participates jointly with the City of Bakersfield);
- Telephone book recycling program (co-sponsors with Community Clean Sweep);
- Community Clean Sweep summer workshops called “Trash to Treasure,” which educate children about recycling and other Kern County Waste Management Department programs (sponsor);
- An innovative elementary school program called the “Clean Kids Hit the Road Puppet Show” (operates in collaboration with Community Clean Sweep); and
- Recycling trailers for churches, schools, and nonprofit organizations.

Landfills

The Kern County Public Works Department operates seven recycling and sanitary landfills throughout the County. Landfills are located in Bakersfield, Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi. No solid waste is currently generated at the project site. The project would likely be served primarily by the Shafter-Wasco Landfill, located at 17621 Scofield Avenue, in the community of Shafter, approximately 32 miles southeast of the project site. This Class III landfill accepts clean inerts (e.g., source separated asphalt, brick and concrete); C&D waste (e.g., asphalt, brick, concrete, dirt, and metal); dead animals; greenwaste; ordinary household trash; and metals. The landfill does not accept hazardous waste, hot ashes, liquids of any kind, and non-friable asbestos. As of 2001, approximately 7,901,339 cubic yards (36 percent of the total 21,895,179 cubic yard capacity) remained. The permitted maximum daily disposal is 1,500 tons per day (CalRecycle, 2021). The other nearby landfill is the Taft Sanitary Landfill, a Class III landfill which is located approximately 46 miles southeast of the project site at 13351 Elk Hills Road, in the City of Taft.

Electric Power, Natural Gas, and Telecommunications

Pacific Gas and Electric (PG&E) has existing electrical and transmission facilities in the project area, including the PG&E Arco Substation. PG&E is the natural gas provider in this area of Kern County. No known natural gas pipelines or telecommunication lines exist at the project site.

4.17.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Energy Commission

The California Energy Commission (CEC) is the state's primary energy policy and planning agency. Created in 1974, the CEC has five major responsibilities: forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts (MW) or larger, promoting energy efficiency through appliance and building standards, developing energy technologies and supporting renewable energy, and planning for and directing the state response to energy emergencies.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, expanding the Railroad Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Railroad Commission was renamed the California Public Utilities Commission. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

California Department of Resources Recycling and Recovery

California Department of Resources Recycling and Recovery (CalRecycle) is the state agency designated to oversee, manage, and track California's 76 million tons of waste generated each year. It is one of the six agencies under the umbrella of the California Environmental Protection Agency. CalRecycle administers and provides oversight for all of California's State-managed non-hazardous waste handling and recycling program. CalRecycle provides training and ongoing support for local enforcement agencies that regulate and inspect California's active and closed solid waste landfills.

State Water Resources Control Board and Regional Water Quality Control Board

The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). The SWRCB sets statewide policy for the implementation of state and federal laws and regulations. The RWQCBs adopt and implement Water Quality Control Plans (Basin Plans), which recognize regional

differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities. The project site is within the jurisdiction of the Central Valley RWQCB.

California Department of Water Resources

The California Department of Water Resources (DWR) is responsible for protecting, conserving, developing, and managing much of California's water supply. These duties include: preventing and responding to floods, droughts, and catastrophic events; informing and educating the public on water issues; developing scientific solutions; restoring habitats; planning for future water needs, climate change impacts, and flood protection; constructing and maintaining facilities; generating power; ensuring public safety; and providing recreational opportunities.

California Water Code Section 13260

California Water Code Section 13260 requires any person who discharges waste, other than into a community sewer system, or proposes to discharge waste that could affect the quality of waters of the State to submit a report of waste discharge to the applicable Regional Water Quality Control Board (RWQCB). Any actions of the projects that would be applicable under California Water Code Section 13260 would be reported to the Central Valley RWQCB.

Senate Bills 610 and 221

Senate Bill (SB) 610 and SB 221, passed in 2001, are companion measures that seek to promote more collaborative planning among local water suppliers and cities and counties. They require that water supply assessment occur early in the land use planning process for all large-scale development projects. If groundwater is the proposed supply source, the required assessments must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project's demands. They also require an identification of existing water entitlements, rights, and contracts and a quantification of the prior year's water deliveries. In addition, the supply and demand analysis must address water supplies during normal, single and multiple dry years, presented in five-year increments for a 20-year projection. In accordance with these measures, a WSA is required for a proposed industrial, manufacturing, or processing plant that would house more than 1,000 persons; occupy more than 40 acres of land; or have more than 650,000 square feet of floor area (California Water Code, Section 10912).

California Integrated Solid Waste Management Act of 1989 or Assembly Bill 939

Pursuant to the California Integrated Solid Waste Management Act of 1989 (Public Resources Code [PRC] Section 40050, et seq.) or Assembly Bill (AB) 939, all cities in California are required to reduce the amount of solid waste disposed in landfills. AB 939 required a reduction of 25 percent by 1995 and 50 percent by 2000. Contracts that include work that will generate solid waste, including construction and demolition debris, have been targeted for participation in source-reduction, reuse, and recycling programs. The contractor is urged to manage solid waste generated by the work to divert waste from disposal in landfills (particularly Class III landfills) and maximize source reduction, reuse, and recycling of C&D debris.

Assembly Bill 341

Since the passage of AB 939, diversion rates in California have been reduced to approximately 65 percent, the statewide recycling rate is approximately 50 percent, and the beverage container recycling rate is approximately 80 percent. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75 percent of solid waste must be reduced, recycled, or composted by the year 2020. The State provided the following strategies to achieve that 75 percent goal:

1. Moving organics out of the landfill;
2. Expanding the recycling/manufacturing infrastructure;
3. Exploring new approaches for state and local funding of sustainable waste management programs;
4. Promoting state procurement of post-consumer recycled content products; and
5. Promoting extended producer responsibility.

To achieve these strategies, the State recommended legislative and regulatory changes including mandatory organics recycling, solid waste facility inspections, and revising packaging. With regard to construction and demolition, the State recommended an expansion of California Green Building Code standards that incentivize green building practices and increase diversion of recoverable construction and demolition materials. Current standards require 50 percent waste diversion on construction and some renovation projects, although this may be raised to 65 percent for nonresidential construction in upcoming changes to the standards. The State also recommends promotion of the recovery of construction and demolition materials suitable for reuse, compost or anaerobic digestion before residual wastes are considered for energy recovery.

California Solid Waste Reuse and Recycling Access Act of 1991 or Senate Bill 1327

The California Solid Waste Reuse and Recycling Access Act of 1991 (PRC Chapter 18) identified a lack of adequate areas for collecting and loading recyclable materials, resulting in a significant impediment to diverting solid waste. This act requires state and local agencies to address access to solid waste for source reduction, recycling, and composting activities. Each local agency must adopt an ordinance related to adequate areas for collecting and loading recyclable materials for development projects.

Local

Kern County Integrated Waste Management Plan

The Kern County Public Works Department (KCPWD) is required by the State to plan and implement waste management activities and programs in the County unincorporated area to assure compliance with AB 939 and subsequent State mandates. The Kern County Integrated Waste Management Plan (IWMP) includes a Reduction and Recycling Element, Household Hazardous Waste Element, and Non-disposal Facility Element. The Plan was approved February 1998 by the California Integrated Waste Management Board (now California Department of Resources Recycling and Recovery or CalRecycle). The Kern County IWMP is the long-range planning document for landfill facilities.

Kern Groundwater Authority Groundwater Sustainability Plan

As discussed above, the project is located within the Kern County Subbasin, which is ranked as high priority and identified as being subject to critical overdraft conditions under SGMA. The Kern Groundwater Authority GSA was formed in order to comply with SGMA. The Kern Groundwater Authority GSA prepared a Groundwater Sustainability Plan in January 2020 in order to comply with SGMA and serve as a comprehensive foundation for the groundwater management within areas of the Kern County Subbasin covered by the Kern Groundwater Authority. The Groundwater Sustainability Plan provides information on the current groundwater conditions; establishes sustainability goals, to be achieved through the implementation of management actions and projects; and demonstrating how sustainability would be achieved through the 20-year implementation period.

Kern County Construction Waste Diversion Requirements per the California Green Building Code

As part of compliance with the State of California Green Building Code Requirements (known as CALGreen) that took effect beginning January 2011, Kern County implemented the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan prior to project construction for approval by the Kern County Building Department;
- Recycling and/or reuse of a minimum 65 percent of construction & demolition waste; and
- Recycling or reuse of 100 percent of tree stumps, rocks and associated vegetation and soils resulting from land clearing.

Kern County Public Works Department Recycling Programs

The Waste Operations Division of the Kern County Public Works Department administers or sponsors the following recycling programs, which contribute toward meeting State-mandated solid waste diversion goals to achieve 75 percent recycling, composting, or source reduction of solid waste by 2020:

- Recycling programs at landfills to recycle or divert a wide variety of products, such as wood waste, cathode ray tubes, tires, inert materials, appliances, etc.;
- Drop-off recycling centers for household recyclables. The County- and the City-operated drop-off recycling centers, which are located in the unincorporated metropolitan area and the city, may be used by both County and city residents;
- Financial assistance for operation of the City of Bakersfield Green Waste Facility;
- The Kern County Special Waste Facility for the disposal of household hazardous waste. Services are provided to all Kern County residents;
- Semi-annual “bulky waste” collection events, which are held in the Bakersfield area and available to both County and city residents (co-sponsor);
- Christmas tree recycling campaign (participates jointly with the City of Bakersfield);
- Telephone book recycling program (co-sponsors with Community Clean Sweep);

- Community Clean Sweep summer workshops called “Trash to Treasure,” which educate children about recycling and other Kern County Waste Management Department programs (sponsor);
- An innovative elementary school program called the “Clean Kids Hit the Road Puppet Show” (operates in collaboration with Community Clean Sweep); and
- Recycling trailers for churches, schools, and nonprofit organizations.

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for utilities and service systems applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference (Kern County, 2009).

1.4 Public Facilities and Services

Goals

- Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.
- Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

Policies

- Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.
- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Implementation Measures

- Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.
- Measure D: Involve utility providers in the land use and zoning review process.

1.9 Resources

Goal

Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

1.10 General Provisions

1.10.1 Public Services and Facilities

Policies

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Implementation Measures

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

Chapter 5. Energy Element

5.4.5 Solar Energy Development

Goal

Goal 1: Encourage safe and orderly commercial solar development.

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.

4.17.4 Impacts and Mitigation Measures

Methodology

Potential impacts to utilities and service systems associated with construction and operation of the project have been evaluated using a variety of resources, including multiple online sources and published documents, as well as the project-specific *Azalea Solar Project Hydrology and Water Quality Study S2S Environmental Resources*, 2021), and the *Azalea Solar Project Water Supply Assessment* (S2S Environmental Resources, 2022) included in Appendix J and Appendix K of this EIR, respectively. In addition, current data obtained from the County and State of California about the capacity of landfills was used to identify potential impacts. Using these resources and professional judgment, impacts were analyzed according to significance criteria established in Appendix G of the *CEQA Guidelines*, described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant adverse effect on utilities and service systems.

A project could have a significant adverse effect on utilities and service systems if it would:

- a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- b. Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- c. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition the provider's existing commitments;
- d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals; or
- e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Project Impacts

Impact 4.17-1: The project would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Construction

Water

The solar panels and other project infrastructure and facilities would be located on approximately 340 acres of the overall approximately 640 acre project site. The project is located on privately owned land located south of the Kern County/Kings County line in an unincorporated area of north-western Kern County. Construction activities would include: site preparation and grading and would require the most water during ground-disturbing activities primarily for dust suppression and soil compaction. Active construction areas would be watered at a frequency to be determined by the type of activity, site-specific soil conditions, and wind conditions. Water demand during the construction phase is anticipated to last approximately 12-months and is anticipated to require approximately 75 acre-feet of water, which equates to approximately 6.25 acre feet per month. See **Table 4.17-1: Project Water Demands**, for the amortized demand for all project phases.

The water supply during construction would be obtained from an on- or off-site groundwater well in the Kern Subbasin, and/or it would be purchased from a WDWA member water district and trucked to the project site. Once on-site water would be stored and used as needed.

As described in Section 1.2, *Project Location*, the proposed project site is located near the Kern Subbasin of the San Joaquin Valley Groundwater Basin; this area is adjacent to the service area of the LHWD, which is also a Member Unit of the WDWA for delivery of imported SWP water, as well as a member agency of the KGA, for participation in the KGA Umbrella GSP for the Kern Subbasin. As such, the water supply provided by WDWA member water districts consist of both imported SWP water and locally produced groundwater resources.

TABLE 4.17-1: PROJECT WATER DEMANDS

Project Phase (Duration of Phase)		Annual Demand (acre-feet/year)	Total Demand (acre-feet)
Construction (1 year)¹			
	Dust and Fire Suppression, Compaction, and Other Construction Activities	75	75
Total Construction		75	75
Operation and Maintenance (35 years)²			
	Panel Washing ³	0.25	8.75
	Fire Suppression ⁴	1.48	50.15
Total O&M		1.73	58.90

Project Phase (Duration of Phase)		Annual Demand (acre-feet/year)	Total Demand (acre-feet)
Decommissioning (1 year)⁵			
	Dust and Fire Suppression, and other Decommissioning Activities	75	75
Total Decommissioning		75	75
TOTAL DEMAND		--	208.9
AMORTIZED DEMAND		5.65	--

NOTES:

- ¹. The construction period is assumed to be 12 months, during which time the project's full construction water demand of 75 acre-feet would occur; the total construction-period water demand is assumed to be 75 acre-feet regardless of the duration of construction, such that a longer construction period would result in a lower monthly construction demand.
- ². The O&M period is assumed to be 35 years, which is 15 years longer than the 20-year projection required by California Water Code (as amended by SB 610) to be considered in a WSA. However, for the purposes of full disclosure and to provide a conservative analysis, this table presents all anticipated water demands of the project over the entirety of its anticipated operational lifespan of 35 years. During the O&M period, the activities requiring water supply would include washing the solar panels and emergency fire suppression. Per the project applicant the O&M building will not have plumbing for water or wastewater.
- ³. This analysis assumes that solar PV panel washing requires approximately 0.25 AFY. See Section 1.9.2.
- ⁴. This analysis assumes that approximately 2.95 acre-feet of water would be stored on-site and designated for emergency fire suppression use only. In addition, this analysis conservatively assumes that the fire suppression water would be entirely replenished every two years, or a total of seventeen times replenished; this is likely an over-estimation, as emergency fire suppression activities are unlikely to occur on a bi-annual basis.
- ⁵. Decommissioning activities for the proposed project are not specifically known at this time; therefore, in order to provide a conservative analysis that accounts for all project phases, this analysis assumes that the project's decommissioning period would be the same as the project's construction period, in terms of duration (12 months) and water demand for dust suppression (75 acre-feet).
- ⁶. The amortized demand of 5.65 AFY is the project's total estimated water demand (208.9 acre-feet) averaged over the cumulative duration of all project phases (37 years, accounting for one year each of construction and decommissioning, and 35 years of operation and maintenance).
AFY = acre-feet per year.

As shown in **Table 4.17-1: Project Water Demands**, the proposed project's total water demand for the life of the project, 37 years, would be a total of approximately 208.9 AF. This volume accounts for construction, (75 acre feet for dust suppression, compaction, etc.), operation and maintenance (58.9 acre-feet for panel washing and fire suppression), and decommissioning (75 acre-feet). Amortized annually this equates to a yearly water demand of 5.65 AF.

Long-term water supply availability projections provided in the KGA and the WDWA were used to analyze the water supply reliability and also showed that the Kern Subbasin is currently projected to be affected by overdraft conditions due to decreasing SWP water deliveries, and the anticipated effects of climate change.

As discussed above, the project site is used for agricultural purposes and is occasionally irrigated.

Because a portion of the project site will be converted to a solar energy development the demand for water would be reduced considering the current use for intermittent agricultural operations. Based on typical water use for growing wheat for grazing, a minimum of 8.6 inches of water per acre are used in a drought year. For the purposes of this analysis it was conservatively assumed water would be applied to the irrigated portions of the project site every two years. Considering approximately 320 acres of the site are irrigated every other year, this equates to approximately 114.7 AFY of water.

Compared to the existing water use, the proposed project's operational water demands are conservatively estimated to be 1.73 AFY, which increases to 5.65 AFY when amortized to include the 75- AFY construction and decommissioning water demands, respectively. This results in a potential reduction of 109 AFY used by converting from agricultural use to solar energy development. Therefore, the proposed project would reduce existing on-site water usage and project implementation could help facilitate achievement of sustainable groundwater conditions.

Thus, based on the information and analysis provided herein, although the proposed project would occur while overdraft conditions are present in the Kern Subbasin, the project would not impede existing management efforts towards reaching a sustainable balance in the basin. Moreover, the proposed project could facilitate achievement of the WDWA's sustainability goal by reducing overall water use. Therefore, sufficient water is available to meet the project's maximum potential water demands over a 35-year operational lifespan, and that water supply is reliable under normal-year, single-dry-year, and multiple-dry-year conditions.

Wastewater Treatment

Construction of the project would generate a minimal volume of wastewater. Wastewater contained within portable toilet facilities and portable hand washing facilities would be disposed of at an approved offsite disposal site. The Kern County Public Health Services Department/Environmental Health Services Division is responsible for monitoring the use of portable toilet facilities, and the project proponent would be required to provide documentation of a portable toilet pumping contract. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed. Therefore, construction of the project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Stormwater Drainage

As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. Additionally, in compliance with National Pollutant Discharge Elimination System General Construction Permit requirements, the proposed project would design and submit a site-specific Storm Water Pollution Prevention Plan to minimize the discharge of wastewater during construction and a Water Quality Management Plan that include best management practices for runoff control. Further, the hydrologic study and final drainage plan required by Mitigation Measure MM 4.10-1 would detail any necessary design features required to properly control stormwater runoff, both onsite and offsite.

Construction of the project is not expected to exceed the capacity of existing storm water drainage systems in the area. Therefore, operation of the project is not anticipated to result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Electric Power

Electricity is not expected to be consumed in large quantity during project construction, as construction equipment and vehicles are not electric (but rather diesel- or gasoline-powered). However, minimal electricity would be needed from water pumping and for temporary construction offices (commercial coaches) during construction. Electricity for construction use would either be provided by diesel generators and/or a temporary PG&E distribution line hookup would be installed on the project site. Because construction of the project would not displace existing electrical facilities, and would tie into existing off-site facilities, relocation of electrical facilities would not be required. Therefore, as construction of the project would not require or result in the relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects, impacts would be less than significant.

Natural Gas

The project will not use natural gas during the construction phase. Therefore, construction of the project would not require or result in the relocation or construction of new or expanded natural gas facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Telecommunications

Telecommunication equipment including underground and/or overhead copper telecommunication line and/or fiber optic cable (for which a CUP application has been submitted (CUP 14, Map 3)) are proposed to be installed on the project site. This equipment will extend off-site for connection purposes. When considering impacts resulting from the installation of any required telecommunications infrastructure, all impacts are of a relatively short duration and would cease to occur when installation is complete. Any work that may affect services to the existing telecommunications lines would be coordinated with service providers. Therefore, construction of the project would not require or result in the relocation or construction of new or expanded telecommunication facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the PG&E Arco Substation would be extended westerly from the project boundary to the Arco Substation and the access road would be extended from the northerly project boundary to King Road. Arco Substation improvements are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. As noted above, below ground installations are typically installed 24 to 48 inches below grade. Above ground lines are typically placed below existing distribution lines or on new, adjacent wooden poles. Lines would be placed within utility franchise easements to the extent feasible and all infrastructure would be built to the latest regulatory and industry standards. Accordingly, the construction would result in less-than-significant impacts.

Operation

Water

As discussed above, operations water demand would be approximately 1.73 AFY or 5.65 AFY amortized over the life of the projects (accounting for 75 AFY for construction and 75 AFY for decommissioning). Considering the existing water use for agricultural operations is approximately 114.7 AFY, the project could represent a reduction of 109 AFY. Therefore, the proposed project would reduce existing on-site water usage and project implementation could help facilitate achievement of sustainable groundwater conditions. Impacts in this regard would be less than significant.

Wastewater

As previously discussed, wastewater would be generated through facilities inside of commercial coaches, facilities inside of O&M building, portable toilets, and portable handwashing facilities. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed. Portable facilities would be required to serve the estimated up to 5 full-time equivalent (FTE) personnel. Portable toilets and hand washing facilities would be serviced by truck and any wastewater would be disposed of at an approved off-site disposal facility. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Stormwater Drainage

As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure. There are no existing stormwater drainage systems on the project site, and no stormwater drainage systems are anticipated to be applicable as part of the project. The project would include limited grading such that off-site flow that enters the site would continue to flow through the site in a similar manner as it does currently. However, installation of the proposed facilities discussed in Chapter 3, *Project Description*, of this EIR could alter existing on-site drainage patterns and flowpaths to some degree and could alter the way stormwater from upgradient flows across the project site during major storm events. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. In addition, a large area of pervious surfaces would surround the proposed facilities that would continue to absorb runoff, thus allowing infiltration of the runoff produced by the new minor impervious surfaces.

The proposed project is not expected to exceed the capacity or change the drainage patterns of existing storm water drainage systems in the area. Therefore, operation of the project is not anticipated to or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Electric Power

Project operation would generate a combined total of approximately 60 MW of renewable electrical energy including associated energy storage systems, that would help to reduce or offset electricity on the

state- wide utility grid. The project includes the installation of 70 kV overhead line(s) to transmit generated power to the existing PG&E Arco Substation. Operational energy consumption in the form of electricity would occur as a result of solar panel maintenance and the O&M facilities proposed on the two sites. However, electricity use would be offset by the power produced by the solar panels. In addition, the use of transportation fuel would be minimal and would be predominately associated with worker commute trips and occasional panel washing activities. As described in Section 4.6, *Energy*, of this DEIR, operation of the project would consume 80,409.91 kilowatt hours (kWh) of electricity per year. Total annual electricity generation is estimated to be approximately 60 MW, which more than offsets the energy consumed annually to operate the project. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Natural Gas

The project will not use natural gas during the operation phase. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded natural gas facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Telecommunications

The proposed project would require redundant telecommunication connections. The primary telecommunication line would consist of fiber optic cable and/or copper telecommunication line installed above and/or below ground. The line would be attached to either existing utility lines located outside of the project site or the proposed gen-tie. The proposed telecommunication route would use a combination of existing poles, new poles, and/or below ground installations between the existing telecommunications infrastructure and the Arco Substation. Below ground installations are typically installed 24 to 48 inches below grade. Above ground lines are typically placed below existing distribution lines or on new, adjacent wooden poles. Lines would be placed within utility franchise easements to the extent feasible.

The point of interconnection to the existing telecommunication infrastructure would be located within a small telecommunications shelter. The interconnection utility service would consist of fiber stranded cables (Dielectric Self Supporting and Optical Ground Wire). A secondary internet connection would be provided using a point-to-point microwave wireless link.

An on-site communications tower is proposed on the project site. The proposed tower would have a maximum height of 125 feet. The purpose of the communications towers is: (a) to facilitate communication between on-site entities and off-site entities, during the construction and decommissioning phases of the Azalea Solar Project; and (b) to transmit operational data to off-site monitoring systems during the operational phase of the Azalea Solar Project.

Telecommunications facilities would be constructed in compliance with all relevant requirements and would be maintained throughout the lifetime of the project. Impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project boundary to the Arco Substation and the access road would be extended from the northerly project boundary to King Road. Arco

Substation improvements are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. As noted above, below ground installations are typically installed 24 to 48 inches below grade. Above ground lines are typically placed below existing distribution lines or on new, adjacent wooden poles. Lines would be placed within utility franchise easements to the extent feasible and all infrastructure would be built to the latest regulatory and industry standards. Once installed, the transmission interconnection facilities would be stationary and not require relocation that could result impacts. Accordingly, the construction and operation of the PG&E Arco Substation and Interconnection Facilities would result in less-than-significant impacts.

Mitigation Measures

Implement Mitigation Measure MM 4.10-1.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.17-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

The water supply assessment prepared for the proposed project, identified and characterized known water in comparison to the water supplies available to the project over a 20-year projection. This evaluation considered the varying drought conditions and ongoing long-term supply management activities. The proposed project is assumed to use water that would be produced from an on- or off-site groundwater well near the Kern Subbasin, and/or it would be purchased from a WDMA member water district either directly through pumping the water, or indirectly through a banking or exchange program.

The Kern Subbasin is currently projected to be affected by overdraft conditions due to decreasing SWP water deliveries, and the anticipated effects of climate change. The WDMA has implemented projects and management actions that are designed to improve groundwater sustainability by improving the model of groundwater use, utilizing groundwater currently considered unusable, and expanding existing conjunctive use programs. Although the proposed project would occur while overdraft conditions are present in the Kern Subbasin, the project would not impede existing management efforts towards reaching a sustainable balance in the basin, and would actually facilitate achievement of the WDMA's sustainability goal by providing some of the same effects on groundwater supply as would be achieved through implementation water conservation strategies implementation by WDMA.

As discussed above, the proposed project's amortized annual water demand is 5.65 AFY that accounts for 37 years (including the one year construction and one year decommissioning phases) and 35 years for operation and maintenance (washing the solar panels, and water for emergency fire suppression). During a normal O&M year for the project, water demands are conservatively estimated to be approximately 1.73 AFY. It should be noted that water demand may be as low as 0.25 AFY. Based on these factors, there is sufficient water supply to meet the project's maximum potential water demands over a 35-year operational lifespan under normal-year, single-dry-year, and multiple-dry-year conditions. Impacts are less than significant and no additional mitigation is required.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project boundary to the Arco Substation and the access road would be extended from the northerly project boundary to King Road. These improvements would not result increased demand for water and impacts would not occur.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.17-3: The project would result in a determination by the waste water treatment provider which may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

The project is not expected to generate a significant amount of wastewater from the five FTE employees and others who may visit the site. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed for operations. Wastewater would be generated through portable restroom and handwashing facilities. Portable toilets would be serviced as needed by a licensed provider. Portable toilets and portable hand washing facilities would be serviced by truck (not served by septic system) and any wastewater would be disposed of at an approved off-site disposal facility. Thus, because wastewater generated would be negligible, would not exceed wastewater treatment capacity of any treatment providers, or the proposed OWTS, impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project boundary to the Arco Substation and the access road would be extended from the northerly project boundary to King Road. These improvements would not result increased demand for waste water treatment and impacts would not occur

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.17-4: The project would 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***

It is anticipated the project would not generate substantial amounts of non-recyclable waste during construction. The project site is currently undeveloped, therefore, there would not be demolition waste generated by the project. In addition, materials brought to the project site would be used to construct facilities, and few residual materials are expected. Solar modules would be delivered to the site via shipping containers packaged via use of wood and cardboard materials. The shipping container materials for module deliveries would be recycled and are not anticipated to generate non-recyclable waste. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. Any hazardous waste generated during construction would be disposed of at an approved facility.

Non-hazardous construction refuse and solid waste would either be collected and recycled, or disposed of at a local landfill. The Shafter-Wasco Landfill (approximately 32 miles southeast of the project site) is the closest landfill to the project site and, therefore, would be the most likely recipient of project site solid waste. The Shafter-Wasco Landfill has a remaining capacity of 7,901,339 cubic yards with an anticipated closure year of 2054 (CalRecycle, 2021). The Shafter-Wasco Landfill is a Class III landfill and, therefore, accept wastes from construction and demolition as well as industrial sources, but does not accept hazardous waste, hot ashes, and liquids of any kind. With the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction. Therefore, construction impacts of the project on existing landfills are anticipated to be less than significant.

Operation

During operation, little to no solid waste would be generated. The O&M building would include up to 5 FTE personnel, and the only waste generated onsite would result from office and maintenance activities. The Waco-Shafter Landfill has a planned cease operation date of 2054 and is expected to serve the project throughout its operational phase. In addition, with the implementation of Mitigation Measure MM 4.17-1, as discussed below, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste generated during project operation, thereby further reducing solid waste generated during operation. Therefore, impacts related to landfill capacity would be less than significant with the implementation of Mitigation Measure MM 4.17-1.

Decommissioning

Solar PV panels have a lifespan of over 30 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time. Solar PV panels contain valuable materials that would likely be recycled at the end of their useful life. Solar panel manufacturers have identified that approximately ninety percent of materials in solar panel modules can be recycled, where feasible. In the case of both crystalline silicon and thin film CdTe PV technology, a national PV module recycling network has been established by the U.S. Solar Energy Industry Association (SEIA) for providing module collection and recycling services (see <https://www.seia.org/initiatives/seia-national->

pv-recycling-program). Decommissioning of the collection lines would not generate substantial amounts of solid waste. As stated above, the Wasco-Shafter Landfill is expected to be in operation through 2054 and is anticipated to serve as a solid waste disposal location during project decommissioning. Per Mitigation Measure MM 4.17-1, a collection and recycling program would be implemented during decommissioning to recycle project components and minimize disposal of project components in landfills. Following decommissioning, the project site would be returned to predevelopment conditions or converted to other uses in accordance with applicable land use regulations in effect at the time, and would not generate waste. Therefore, impacts related to landfill capacity would be less than significant during decommissioning with the implementation of Mitigation Measure MM 4.17-1.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities would include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. The access road would be extended from the northerly project boundary to King Road. These improvements would not generate additional solid waste on the project site and impacts would not occur.

Mitigation Measures

- MM 4.17-1:** During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. The provisions listed below shall apply to the project.
- a. An onsite Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance and Decommissioning, Trash Abatement and Pest Management Program.
 - b. The Recycling Coordinator shall facilitate recycling of all construction waste through coordination with contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes.
 - c. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal
 - d. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.
 - e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.17-1, impacts would be less than significant.

Impact 4.17-5: The project would comply with Federal, State, and Local management and reduction statutes and regulations related to solid waste.

The project would generate solid waste during construction and operation. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. AB 341 requires Kern County to attain a waste diversion goals of 75 percent by 2020 through reduction, recycling, or composting. In addition, as part of compliance with CALGreen requirements, Kern County implements the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan;
- Recycle and/or reuse a minimum 65 percent C&D waste; and
- Recycle or reuse 100 percent of tree stumps, rocks, and associated vegetation and soils resulting from land clearing.

Furthermore, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. Implementation of Mitigation Measure MM 4.17-1 would ensure compliance with waste diversion and recycling requirements by requiring recycling during construction, operation, and decommissioning of the project. The project would be required to comply with all federal, State, and local statutes and regulations related to the handling and disposal of solid waste. Therefore, implementation of the project would result in less-than-significant impacts regarding compliance with management and reduction statutes and regulations related to solid waste.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly from the project boundary to the Arco Substation and the access road would be extended from the northerly project boundary to King Road. Arco Substation improvements are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Construction of these improvements would be in compliance with AB341 and CalGreen requirements, as required by Kern County. These improvements would also be subject to the requirements of MM 4.17-1, and would not conflict with statutes and regulations related to solid waste. on the project site and impacts would not occur.

Mitigation Measures

Implement Mitigation Measure MM 4.17-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.17-1, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative analysis of impacts on water supply and wastewater are the related projects that would impact the Kern County Subbasin. The geographic scope of analysis for stormwater drainage, electricity, telecommunications, and solid waste disposal, includes the projects that would be

relying on the same facilities and infrastructure. Impacts of the project would be cumulatively considerable if the incremental effects of the project when combined with other past, present, or reasonably foreseeable projects (listed in **Table 3-4: Cumulative Projects List**, in Chapter 3, *Project Description*) would result in a significant cumulative effect. Physical impacts to public services, utilities, and service systems are usually associated with population in-migration and growth in an area, which increase the demand for a particular service, leading to the need for expanded or new facilities. There is little to no growth associated with the project and nearby other solar and wind energy projects, thereby limiting the potential to contribute to demand for a particular service.

As described above, the project would place few demands on water, wastewater, stormwater drainage, electricity telecommunications, and solid waste disposal (during construction and operation). As described above, the project would place no demands on natural gas.

Water

Several utility-scale renewable energy projects are operating and proposed in the Central Valley that would impact the existing water supply. Water for much of these areas is derived KGA. The most water-intensive uses for renewable energy projects are typically during the construction phase to minimize dust during grading operations, and during decommissioning which also results in ground disturbances. Given the limited water supply in the area, other projects are expected to either rely on new or existing wells or truck in their water supply (similar to the project). All projects relying on water from the basin would be required to obtain water from suppliers that have existing water rights or would be required to apply for new water rights. Any projects that cannot secure a water supply would not move forward to construction or operation. It is further noted that water use of solar production projects is generally less than other uses that are existing, typically agricultural areas in which they would be located. In these instances, the proposed project and other such projects, would have less water demand than the existing uses on those sites. Therefore, cumulative impacts related to water supply and facilities would be less than significant.

Wastewater

The project is located in an area with no wastewater treatment provider or infrastructure and is not expected to generate a significant amount of wastewater. Wastewater produced during construction (which is not disposed of via septic system) would be collected in portable toilet facilities and portable hand wishing facilities, and disposed of at an approved facility. Other planned renewable energy projects may or may not propose an O&M building that would require the installation of a septic system. Therefore, the project would not have the potential, when combined with impacts from past, present, or reasonably foreseeable projects, to result in a cumulative impact to a regional wastewater treatment facility or the capacity of said facilities.

Stormwater Drainage

As described above, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion. In addition, a large amount of pervious surfaces would surround the proposed facilities that would continue to absorb runoff thus allowing infiltration of the runoff produced by the new minor impervious surfaces. Cumulative projects would also be required to prepare a hydrologic study and final drainage plan that would help avoid

substantial increases of stormwater generated onsite by their respective ground disturbance. Depending on the findings of their respective hydrologic studies and final drainage plans, these projects may need to construct stormwater control structures onsite to reduce the potential for increased stormwater runoff. Other projects in the vicinity would be required to offset substantial increases in stormwater as well per County requirements and would also be required to implement best management practices (BMPs), as well as comply with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit and their respective Storm Water Pollution Prevention Plan (SWPPP) as applicable. Therefore, the project would not substantially contribute to a cumulative impact on stormwater drainage facilities.

Electric Power

Electricity is not expected to be consumed in large quantity during project construction, as construction equipment and vehicles are not electric (but rather diesel- or gas-powered). The project would have a collection system connecting PV modules to the applicable existing substation which includes a combination of underground, aboveground cable trays and overhead (poles or H-Frame structures) DC and AC electrical communication cables. As described in Section 4.6, *Energy*, of this DEIR, operation of the project would consume 80,409.91 kilowatt hours (kWh) per year of electricity. Total annual electricity generation is estimated to be 60 MW, which more than offsets the energy consumed annually to operate the project. This project in combination with other cumulative solar projects would help to reduce or offset electricity on the state-wide utility grid and therefore provide a beneficial cumulative impact on electrical demand and facilities.

Natural Gas

The project will not use natural gas during the construction, operational, and/or decommissioning phase. Therefore, the project would not contribute to a cumulatively considerable impact related to natural gas demand and facilities.

Telecommunications

The project in combination with cumulative projects would increase demand on telecommunication facilities. However, demand associated with energy projects and other cumulative development would be minimal and is expected to be within the planning forecasts of the affected telecommunications provider. Therefore, cumulative impacts related to telecommunications facilities would be less than significant.

Solid Waste

Construction materials from the project will be recycled where feasible, with remaining disposal in landfills in compliance with all applicable regulations. Materials brought to the project site would be used to construct facilities and few residual materials are expected. Non-hazardous construction refuse and solid waste would either be collected and recycled or disposed of at a local landfill. In addition, the project would generate a minimal amount of solid waste during operation and is not expected to significantly impact Kern County landfills. The Wasco-Shafter Landfill is expected to operate until 2054 and could accommodate solid waste generated during construction, operation and decommissioning of the proposed project. However, generation of waste from cumulative projects, including other solar and wind projects, could result in a cumulative impact. To ensure that the project reduces the amount of waste sent to landfills, implementation of Mitigation Measure MM 4.17-1 requires that debris and waste generated shall be

recycled to the extent feasible, and an onsite recycling coordinator be designated by the project proponent to facilitate recycling efforts. With implementation of MM 4.17-1, the project's incremental contribution would be less than cumulatively considerable. Furthermore, other cumulative projects would also be required to comply with State and local waste reduction policies.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation would be extended westerly to the Arco Substation and the access road would be extended from the northerly property boundary to King Road. Arco Substation improvements are expected to include the modification of the existing PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. Construction of the gen-tie line would use a combination of existing poles, new poles, and/or below ground installations between the existing telecommunications infrastructure and the Arco Substation. Lines would be placed within utility franchise easements to the extent feasible. Accordingly, construction and decommission of this infrastructure would not have the potential to impact existing utility infrastructure. Further, its development would not increase demand for utility services in the project area. Cumulative effects on utilities and service systems would be less than significant.

Conclusion

In conclusion, the project would not have a significant impact on public utilities. The incremental effects of the project would also not be substantial enough to result in a cumulatively considerable impact on utilities and service systems with implementation of Mitigation Measures MM 4.10-1 and MM 4.17-1. Furthermore, the project would result in a beneficial impact on utility services and offset future stress on energy service providers as energy demand grows in Kern County and Southern California.

Mitigation Measures

Implement Mitigation Measures MM 4.10-1 and MM 4.17-1.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.17-1, cumulative impacts would be less than significant.

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Section 4.18 Wildfire

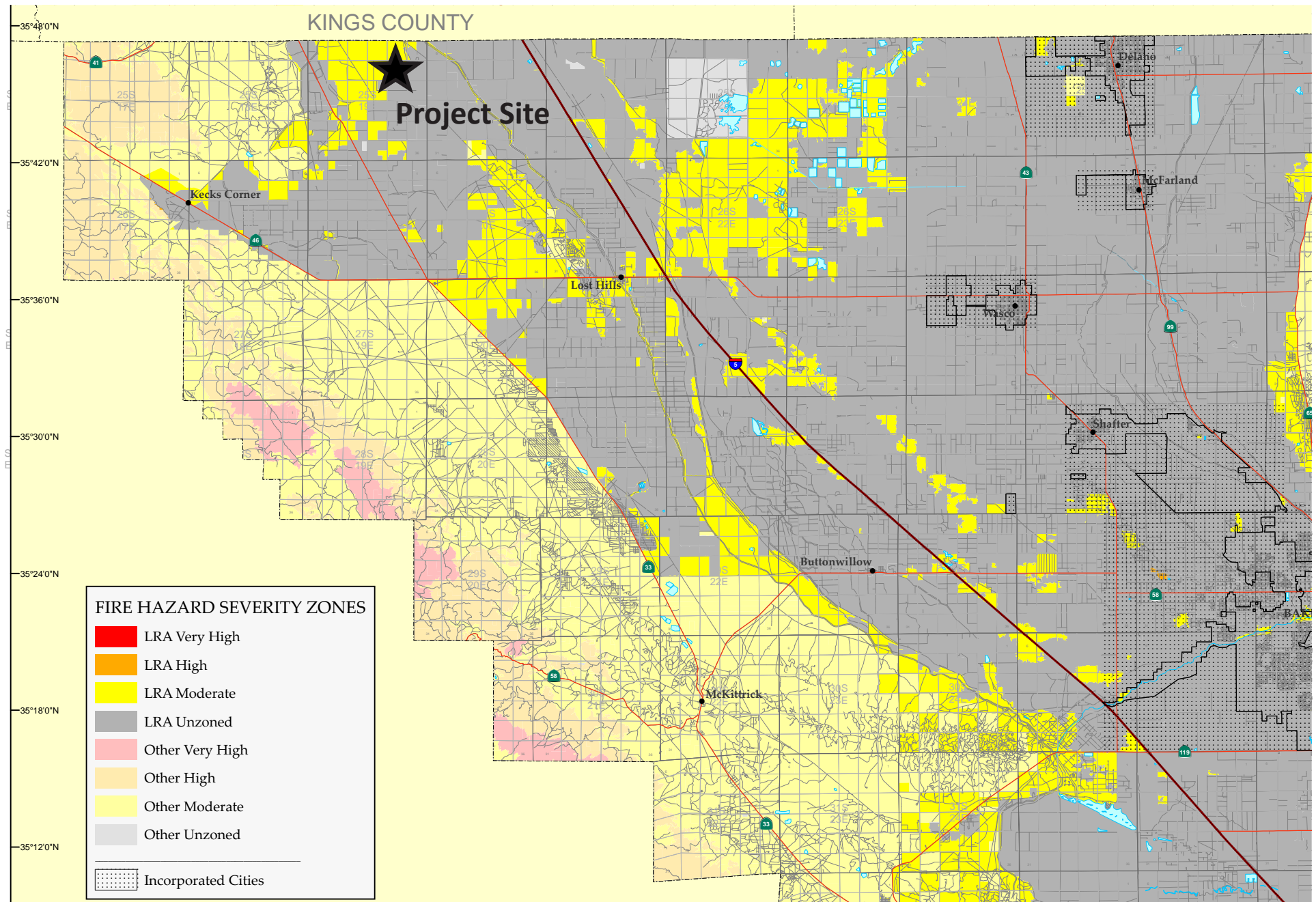
4.18.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for wildland wildfire. The section includes the physical and regulatory setting for the project, the methods used in evaluating these potential impacts, the criteria used to evaluate the significance of potential impacts, and an analysis of potential impacts from wildfire. The analysis in this section is based on the project plans, California Department of Forestry and Fire Protection (CAL FIRE), Kern County Fire Hazards Severity Zone (FHSZ) Maps and with information from the *Biological Resources Technical Report* (Surf to Snow Environmental Resource Management, 2022) provided in Appendix E of this EIR.

4.18.2 Environmental Setting

Site Characteristics and Fire Environment

The project site consists of two gently sloping, vacant, and undeveloped parcels of land covered with sparse to moderately dense non-native vegetation currently used for grazing. Habitats within the project site include agricultural field, non-native annual grassland habitat, and patches of ruderal habitat along the fenced boundaries of the project site. The project site and surrounding lands are mostly flat and exhibit little topographic variation. Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access roadways, a canal and a nut processing plant. Rural residential uses and other solar development are located to the south of the project site. There is one planned, solar energy and transmission project in the vicinity of the project site. This project includes the Chalan project site, located immediately east of the proposed project site. The California Department of Forestry and Fire Protection (CAL FIRE) maps Fire Hazard Severity Zones (FHSZs), based on factors such as fuel, slope, and fire weather to identify the degree of fire hazard throughout California (i.e., moderate, high, or very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern. According to the California Department of Forestry and Fire Protection (CalFire), Kern County Fire Hazards Severity Zone Maps, the project site is located within a Moderate Fire Hazard Severity Zone in a Local Responsibility Area (see **Figure 4.18-1: Fire Hazard Severity Zones for Local Responsibility Areas**). Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior. The project site is not within a Federal Responsibility Area (FRA) or State Responsibility Area (SRA). The project site is also outside of areas identified by CAL FIRE as having substantial or very high risk (CAL FIRE, 2007). The nearest Very High Severity Zone is approximately 18 miles southeast.



SOURCE: CALFIRE, FRAP, 2007

FIGURE 4.18-1: Fire Hazard Severity Zones For Local Responsibility Areas

Draft Environmental Impact Report
Azalea Solar Project



Not to scale

Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. Fire history represented in this section uses CAL FIRE's California Statewide Fire Map that shows fires back through 2013 (CAL FIRE, 2021) and CAL FIRE's Fire and Resource Assessment Program (FRAP) Fire Perimeters: Wildfires 1950-2018 map (CAL FIRE & FRAP, 2018). Based on a review of these maps, no fires in the recorded history have burned across the project site. The nearest fire was the Devils Den fire in 1995 caused by a vehicle, which burned approximately 760.5 acres 2 miles west of the project site (CAL FIRE & FRAP, 2018).

Fire Protection Facilities and Services

The Kern County Fire Department provides fire suppression and emergency medical services to the project area. The project site would be served by Fire Station #26, located at 14670 Lost Hills Rd, in the community of Lost Hills, approximately 15 miles southeast of the project site. Adherence to all applicable regulations would reduce wildfire ignitions and prevent the spread of wildfires.

Vegetation (Fuels)

The project site consists almost entirely of rangeland/spray field (RSP) covering approximately 310.16 acres. The balance of the site consists of California annual grassland (CAG) covering approximately 11.1 acres and approximately 10 acres of disturbed/developed land. Based on aerial photos the RSP area has been rousing disced and sprayed for vegetation control since 2010 and contains sparse native forbs with smooth barley being dominant, and sparse ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis ssp. rubens*), and Bermuda grass (*Cynodon dactylon*). The area consisting of CAG has a greater percentage of native forbs with the greatest vegetative cover occurring in the RSP plant community. While native forbs are uncommon the RSP area contains jimsonweed (*Datura wrightii*), white nightshade (*solanum Americanum*), and procumbent pigweed (*Amaranthus blitoides*). Overall the vegetation is sparse to moderately dense, generally consisting of non-native vegetation that is currently being grazed. The site also has been left fallow or planted with annual row crops. Patches of ruderal habitat along the fenced boundaries of the project site. Areas with vegetative cover in the project site could contribute fuel in the event of a wildfire. Vegetation communities on the proposed project site are further detailed in **Section 4.4, Biological Resources**.

4.18.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

2019 California Fire Code

The 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. Chapter 6 (Building Services and Systems) of the Code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Building services and systems are addressed and include emergency and standby power systems, electrical equipment, wiring and hazards, and stationary storage battery systems. Chapter 33 (Fire Safety During Construction and Demolition) of the Code outlines general fire safety precautions to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment and promote prompt response to fire emergencies. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems (for inhabited structures), fire service features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

2019 California Building Code, Chapter 7A

Chapter 7 of the 2019 California Building Code details the materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area. A Wildland-Urban Interface Area is defined in Section 702A as a geographical area identified by the state as a “Fire Hazard Severity Zone” in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. The building code details the materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

Public Resources Code 4291–4299

California Public Resources Code Section 4291-4299 et seq. requires that brush, flammable vegetation, or combustible growth within 100 feet of buildings be maintained. Vegetation that is more than 30 feet from the building, less than 18 inches high, and important for soil stability, may be maintained; as may single specimens of trees or other vegetation that is maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Additionally, the Public Resources Code outlines infraction fees, certification, and compliance procedures applicable with state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code.

Local

Kern County General Plan

Chapter 4: Safety Element

4.1 Introduction

Goal 1 Minimize injuries and loss of life and reduce property damage.

4.6 Wildland and Urban Fire

Policies

Policy 1 Require discretionary projects to assess impacts on emergency services and facilities.

Policy 4 Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6 All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measure

Measure A Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2019 California Fire Code and the 2018 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees therefore (Kern County, 2019).

Kern County Fire Department Wildland Fire Management Plan

The KCFD Wildland Fire Management Plan adopted in 2009 assesses the wildland fire situation throughout the SRA within the County. The Plan includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan systematically assesses the existing levels of wildland protection services and identifies high-risk and high-value areas, which are potential locations for costly and damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes what can be done to reduce future costs and

losses. The project site is located within a moderate fire hazard severity zone under the KCFD Wildland Fire Management Plan (KCFD, 2009).

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March of 2018 is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local area. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. Additionally, the plan provides an annual report of unit accomplishments, which, in 2017, included completion of a number of fuel reduction projects, the hosting of three wildfire safety expos in battalions 1, 5, and 7, and the award of three SRA fuel reduction grants for a total of \$500,000. The plan gives an overview of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69 percent of Kern County areas are within a SRA. The County is broken up into six different fuel management areas, Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 2 (Western Kern) which is within a moderate fire hazard severity zone (KCFD, 2018).

Fire Prevention Standard No. 503-507 Solar Panels

The Kern County Fire Department Fire Prevention Division adopted Standard No. 503-507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 2016 CFC and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal's Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2021).

4.18.4 Impacts and Mitigation Measures

Methodology

Wildfire impacts are considered on the basis of: 1) offsite wildland fires that could result due to the proposed project, and 2) onsite generated combustion that could affect surrounding areas. The project's potential impacts associated with wildfires have been evaluated using a variety of resources, including CAL FIRE maps showing FHSZs, FRAP, and fire history, vegetation data from the Biological Resources Technical Report, the Preliminary Drainage Study (S2S Environmental Resource Management, 2021), project location maps, and project characteristics. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant impact with respect to Wildfires.

A project would have a significant impact with respect to wildfires if it would be located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and if the project would:

- a. Substantially impair an adopted emergency response plan or emergency evacuation plan;
- b. Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- c. 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;
- d. 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.

Project Impacts

Impact 4.18-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The project site is located in a rural, sparsely developed area with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Also in compliance with applicable Fire Code and Building Code requirements, construction managers and personnel would be trained in fire prevention and emergency response. Fire suppression equipment specific to construction would be maintained on site. Additionally, project construction would comply with applicable existing codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. Therefore, the project would not conflict with the implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation and access road would be extended westerly to the substation and northerly to King Road, respectively. Conditions within these areas are similar to the overall project area. The access road would be constructed in a way to allow adequate emergency vehicle access and would not result in conflict with any emergency response plan or emergency evacuation plan, impacts in this regard would be less than significant.

Additionally, the construction and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site

grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area and would not result in a significant impact to an adopted emergency response plan or emergency evacuation plan.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project and the Arco Substation connection and access road.

Impact 4.18-2: The project would, 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.

The project site is within a LRA zoned as moderate and is approximately 18 miles northeast of the nearest High or Very High FHSZ identified by CAL FIRE (CAL FIRE, 2007). Elevations across the project site range from approximately 462 feet above mean sea level (amsl) at the southwestern portion of the site to approximately 584 feet above msl in the northeast portion of the site. The land generally slopes gently from the northeast to the southwest. The project site is in an area that is characterized by agricultural operations. The project site is currently used for cattle grazing and periodic wheat farming. The site is bordered by vacant land, land used for grazing and to the south and east by orchards.

The proposed project does not include permanent occupancy, though during construction the project site would be temporarily occupied by construction personnel. Construction activities would temporarily introduce ignition sources due to the use of vehicles, heavy machinery. Machinery and tools could result in sparks and heat-generating. To further minimize the risk of fire during construction, the project would adhere to the Kern County Fire Code, the 2019 California Fire Code (CFC), and would adhere to Chapter 33 of the CFC, which outlines standards for fire safety during construction activities.

Operation of the proposed project would require up to 5 full-time equivalent (FTE) personnel [or personnel hours totaling 5 FTE positions (i.e., an average of 200 personnel hours per week)] during operation and maintenance of the project. Due to existing vegetative patterns and use of the site and surrounding areas for grazing and agriculture, the site has a moderate potential to experience wildfire. Nonetheless, if a wildfire occurs in the area either onsite or offsite pollutants may be released. However, it is anticipated that any employees occupying the site would be rapidly evacuated at the time of the event, and/or evacuated well in advance of an approaching wildfire in conformance with applicable County evacuation directives put in place. Such measures would ensure that the exposure of project occupants, and nearest residents, are not exposed to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire to the extent feasible

Thus, because of the existing and proposed condition, the potential for wildfire on the project site is considered moderate. Construction and operation of the project on the project site and would not exacerbate the risk of wildfire. Additionally, project construction and decommission would comply with applicable existing codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. Given the moderate potential for fire and the lack of permanent occupants, the project is not anticipated to expose project occupants to pollutant

concentrations from a wildfire or the uncontrolled spread of wildfire due to slope, prevailing winds and other factors. Impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation and access road would be extended westerly to the substation and northerly to King Road, respectively. Conditions within these areas are similar to the overall project area, they are within a LRA zoned as moderate with no permanent occupants. Therefore, implementation of the access road would not create an extubated risk of wildfire to project occupants.

Additionally, the construction, decommission, and operation of the Interconnection Facilities are expected to include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. This area also has similar conditions to those analyzed above on the project site. Due these factors impacts would be less than significant in this regard.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant for the project and the Arco Substation connection and access road.

Impact 4.18-3: The project would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

The proposed project would install new photovoltaic (PV) panels or modules, a BESS, power conditioning stations (PCS), inverter and transformers, and transmission lines to connect to a proposed and existing substation. All new infrastructure would be installed and operated in accordance with safety standards that would reduce the risk of potential fires. The lithium ion batteries in the BESS would be housed in enclosures that conform to U.S. national safety standards and would comply with the UL 9450 standard for outdoor energy storage enclosures and modules would contain a safety system as required by NFPA 855 and would be tested under the UL 9540A Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems. The system also would be required to have a fire rating in conformance with Kern County standards. The proposed onsite substation would be connected to the existing PG&E Arco Substation via up to 70 kV overhead line(s) with a gen-tie right-of way of up to 95 feet. Minor modifications to the interior of the existing Arco Substation would needed. This work would be performed by PG&E.

The project site would be accessed via a road from King Road and interior access roads would be constructed between the rows of PV panels within the project site that would be approximately 20 feet wide. The access points and interior driveways would be constructed in accordance with Kern County and California Department of Forestry and Fire Protection (CalFire) requirements and maintained to ensure on-site circulation for emergency vehicles during all weather conditions should it be needed. Lastly, telecommunications lines would be installed above and/or below ground along the path of existing utility lines or the proposed gen-tie route to connect at the Arco Substation

The proposed improvements, including the new gen-tie in route and interior roads would be installed in an area that has a moderate potential to experience wild fire. In addition, as part of the project, these areas would undergo maintenance to ensure there is no fuel buildup that would exacerbate a risk of fire either on-site or off-site. It should be noted that the project site also is not adjacent to any area with a substantial risk of wildfire and the listed improvements would not exacerbate the risk of wildfire or result in impacts to the environment. Construction, operation, and maintenance associated with the above mentioned infrastructure would adhere with all federal, state, and local laws, regulations, codes, and safety standards.

Lastly, as discussed in Section 4.14, *Public Services*, the project proponent/operator shall develop and implement a Fire Safety Plan that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code for use during construction, operation and decommissioning, per implementation of Mitigation Measure MM 4.14-1. Implementation of this plan would ensure that potential impacts related to installation or maintenance of associated infrastructure is reduced and, thus, impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco Substation and access road would be extended westerly to the substation and northerly to King Road. These aspects of the project include installation of poles and suspended wires to conduct electricity to the substation and minimal grading to construct the access road. The access road also would be topped with gravel or otherwise stabilized to minimize erosion and reduce fire risk. Accordingly, these elements of the project would require minimal ground disturbance, use of fuels, solvents, and other construction materials. Once operational, the gen-tie lines would be managed in accordance with all safety and maintenance requirements including those for construction in proximity to and within an existing utility easement (gas pipeline). Additionally, MM 4.14-1 would be implemented to ensure a Fire Safety Plan is implemented, impacts would therefore be less than significant.

The construction and operation of the PG&E Interconnection Facilities would include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. These improvements are not anticipated to exacerbate fire risk.. Additionally, MM 4.14-1 would be implemented to ensure a Fire Safety Plan is implemented, impacts would therefore be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.14-1 would be required (see Section 4.14, *Public Services*, for full mitigation measure text).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts will be less than significant for the project and the Arco Substation connection and access road.

Impact 4.18-4: The project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

As previously discussed the proposed project site is not located in or near a High or Very High FHSZ or within a SRA and there have been no previously recorded fires on the proposed project site (CAL FIRE, 2018). The proposed project site is relatively flat, consists of vacant undeveloped land, and surrounded by primarily undeveloped vacant lands that are used for agriculture and grazing. Implementation of the project would not involve substantive grading operations and would not result in the creation of slopes or be adjacent to areas with steep slopes that would contribute to drainage changes or dangers from erosion should a fire occur.

Development of the proposed project could cause minor alterations to existing on-site drainage patterns and flowpaths compared to existing conditions and include the introduction of new impervious surfaces. The project would require implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include erosion and sediment control BMPs during construction, thereby reducing the potential of erosion and siltation during construction and would control potential flooding events that could occur during construction. Additionally, the proposed new impervious surfaces would generate additional stormwater runoff onsite, albeit in minor quantities compared to existing conditions. As discussed in Section 4.10, *Hydrology and Water Quality*, Kern County requires development of a drainage plan with the site development grading permit, which will manage stormwater and reduce the risk for offsite impacts due to erosion and impacts on water quality, as implemented by Mitigation Measure MM 4.10-1. Design measures are intended to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on or off site. One element of the drainage plan is potential retention basin(s) and/or detention ponds(s) to manage facility stormwater.

Thus, while the project would introduce new structures to the project site, the structures would not be placed in a highly flammable landscape and due to the topography of the site and surrounding area, general lack of thick vegetation, and lack of history of wildfire, there is a moderate potential for the project site or off-site areas to be at risk of post-fire slope instability or drainage changes. Furthermore, with the implementation of Mitigation Measure 4.10-1, any potential impacts from runoff and erosion would be further minimized and impacts would be less than significant.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The gen-tie line to the Arco substation and access road would be extended westerly to the substation and northerly to King Road. The construction of the access road could result in potential alterations to drainage patterns as it would increase impervious surfaces. However, the implementation of mitigation measure MM 4.10-1 would require a Stormwater Pollution Prevention Plan (SWPPP) and therefore impacts in this regard would be less than significant.

The construction, decommission, and operation of the PG&E Interconnection Facilities for the transport of renewable energy would include installation of poles and suspended wires to conduct electricity to the substation and would include the modification of the PG&E Arco Substation area by approximately 9,000 square feet, and moderate site grading and fill. These improvements would be required to accommodate the substation facilities and temporary construction work area. This would not result in impacts from runoff and erosion to be significant. Additionally, PG&E's best management practices and APMs include compliance with all applicable state and federal laws and regulations during construction and operation,

including those regulations that relate to flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Finally, MM 4.10-1 would further reduces potential impacts to a less than significant level.

Mitigation Measures

Implement Mitigation Measure MM 4.10-1 would be required (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant for the project and Arco Substation connection and access road.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative impact and analysis is a 6 mile buffer around the project's boundaries. This area is approximately 15.3 miles northwest of the Lost Hills community, with agricultural land being the predominant use in the surrounding areas. Additional surrounding features include undeveloped lands, access roadways, a canal, and a nut processing plant. Rural residential uses and other solar development are located to the south of the project site. The project site and 6 mile buffer fall between I-5, to the east, and State Highway 33, to the west. Due to the project site being located 1 mile south of the County boundary, the cumulative impact geographic scope includes areas in both Kings and Kern County. As shown in Chapter 3, Project Description, **Table 3-4: Cumulative Projects List**, there are 3 related projects within the 6 mile buffer considered in the cumulative analysis.

With regard to impairment of an adopted emergency response plan or emergency evacuation plan, all of the related projects would be required to provide adequate emergency access in accordance with County Fire Code and Building Code requirements and prior to the issuance of a building permit. As previously mentioned, the project site is not classified as being within a High or Very High FHSZ or State Responsibility Area, is surrounded by similar uses, and is located in a rural, sparsely developed area with limited population. As concluded in the discussion of project impacts above, the project would have a less than significant impact related to impairment of an adopted emergency response or evacuation plan. Similar to the project, related projects would be required to determine whether they are classified as being within a high fire hazard severity zone, identified within an emergency evacuation route or within an adopted emergency evacuation plan, and whether they meet the requirements of applicable Fire Code and Building Code. Given the rural project location, vacant or agriculture land use, little development, and low population the project and related projects would not likely have the potential to result in a cumulative impact to an adopted emergency response plan or emergency evacuation plan and, thus, would result in a less than significant cumulative impact.

With regard to cumulative impacts related to exposure of project occupants to pollutant concentrations from a wildfire, the proposed project and projects considered in the cumulative analysis are not within a High or Very High FHSZ or within a State Responsibility Area. Similar to the proposed project, all related projects would be required to implement building and landscape design features in accordance with the Fire Code and Building Code to reduce wildfire risk and exposure of occupants to pollutant concentrations from a wildfire. Adherence to the Fire Code and Building Code requirements would minimize potential impacts

related to exposure to and the uncontrolled spread of a wildfire. As concluded in the discussion of project impacts above, the project would have a less-than-significant impact related to exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. As the project is in an area sparsely developed with no permanent occupants on-site, and only one residential use within a close proximity to the project, cumulative impacts related to exposure of project occupants to pollutant concentrations from a wildfire and, thus, would result in a less than significant cumulative impact.

Related projects may require associated infrastructure such as roads, fuel breaks, and power lines that could exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. These projects would be reviewed by Kern County for land use and zoning consistency and compliance with applicable requirements, and analyzed for environmental impacts. The placement of infrastructure would adhere to all fire codes to minimize the potential fire risk such as siting and design. The proposed project would involve the installation and maintenance of a collector line and access roads to support project construction and ongoing maintenance and operation. While the potential for fire is considered moderate, Mitigation Measure 4.14-1 would be implemented to ensure that a Fire Safety Plan is prepared that contains notification procedures and emergency fire precautions, and submitted to the Kern County Fire Department for review and approval. Given the little development in the area and with compliance to all federal, state, and local laws, regulations, and codes, the project and related projects would have a less than significant cumulative impact related to the installation or maintenance of associated infrastructure.

It is unlikely related projects could be proposed in areas that could expose people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire slope instability, as the general topography in the area is flat and there are very few permanent occupants or residential land uses. Based on the recent fire events in California, all projects would be required to adhere to Kern County's zoning and land use designations and codes, State and local fire codes, and regulations associated with drainage and site stability. These regulations, policies, and codes would reduce the potential for exposing people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire slope instability. Each project would require site-specific hydrology and drainage studies for effective drainage design. As concluded in the discussion of project impacts above, with the implementation of Mitigation Measure MM 4.10-1, the project would not expose people or structures to significant risks due to post-fire slope instability or drainage changes and would have a less-than-significant impact. Nevertheless, given the location is subject to high wind speeds, and is a rural area with limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

PG&E Arco Substation Modification and Electric Transmission Interconnection

The construction, decommission, and operation of the PG&E Interconnection Facilities for the transport of renewable energy is not anticipated to create an exacerbated risk of wildfire or expose people or structures to significant risks due to post-fire slope instability or drainage changes. PG&E's best management practices and APM's include compliance with all applicable state and federal laws and regulations during construction and operation, including those regulations that relate to the fire risk. Cumulative impacts would be less than significant in this regard.

Mitigation Measures

Implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1 would be required (see Sections 4.10, *Hydrology and Water Quality*, and 4.14, *Public Services*, for full mitigation measure text).

Level of Significance after Mitigation

Even with implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1, impacts would remain significant and unavoidable.

Chapter 5

Consequences of Project Implementation

5.1 Environmental Effects Found to Be Less than Significant

Section 15128 of the *CEQA Guidelines* requires that an EIR “contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.”

Kern County has engaged the public in the scoping of the environmental document. Comments received during scoping have been considered in the process of identifying issue areas that should receive attention in the EIR. The EIR’s contents were established based on the Notice of Preparation/Initial Study (NOP/IS) located in Appendix A of this EIR that was prepared in accordance with the *CEQA Guidelines* and in consideration of public and agency input received during the scoping process.

The County circulated the Initial Study/Notice of Preparation (IS/NOP) for the project between September 30, 2021 and November 1, 2021. A public scoping meeting was held on October 21, 2021 to give an overview of the proposed project and to address initial comments from the public. Based on the available information at the time, results of the scoping meeting, the IS/NOP determined that the project would have no impact or less than significant impact with regard to the following impact thresholds and were not anticipated to be discussed in the EIR.

- Land Use and Planning
- Mineral Resources
- Population and Housing
- Recreation

Although Land Use and Planning and Mineral Resources were found to have a less than significant impact in the IS/NOP, a complete discussion of both resource areas are still provided in this EIR. As is the intent of the CEQA process, it was subsequently determined that to ensure full disclosure of potential impacts and to include mitigation, that additional discussions would be needed. The subsequent discussion in the EIR, were intended to and did provide a more complete picture of the planning context for both resources.

Regarding the findings related to Population and Housing and Recreation the IS/NOP made its determinations and the discussion considered that the project would require up to 500 workers per day (during peak construction periods). The construction process will begin in 2023 beginning with the Arco Substation expansion by PG&E. Work on the project site would commence in 2024 and is estimated to take 12 months. Construction workers are anticipated to travel to the site from various local communities and locations throughout Southern California, and the number of workers expected to relocate to the surrounding area is anticipated to be small. If temporary housing for workers is needed, it is expected that accommodations (i.e., extended stay hotels, apartments, RV parks, homes for rent or sale) would be available in the nearby communities of Lost Hills and Kettleman City. Therefore, the project is not anticipated to directly or indirectly induce the development of any new housing or businesses. Furthermore,

the NOP/IS determined that, during the operational phase, the project would have up to 5 full-time equivalent (FTE) personnel (or personnel hours totaling 5 FTE positions, i.e., an average of 200 personnel hours per week), who would commute to the site for operational and maintenance activities. These employees would likely be drawn from the local labor force and would commute from their permanent residences to the project site. However, even if the maintenance employees were hired from out of the area and had to relocate to eastern Kern County, the minor addition of persons to this area would not result in a substantial increase in population in the area. Consequently, this would represent a minor increase in the number of users at local recreational facilities. As a result, the project would not directly or indirectly induce the development of any new housing or businesses, and there would not be a detectable increase in the use of parks or other recreational facilities. No impacts to population and housing or recreation would occur and no further analysis is warranted.

For all other resource areas, this EIR contains a comprehensive analysis of potential environmental impacts.

After further study and environmental review, as provided in this EIR, it was determined that project-level impacts in the following areas would be less than significant or could be reduced to less-than-significant levels with mitigation measures; however, these resource areas are evaluated in this EIR for their potential significance:

- Agriculture and Forest Resources;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Energy;
- Geology and Soils;
- Greenhouse Gas Emissions;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Land Use and Planning;
- Mineral Resources;
- Noise;
- Public Services;
- Transportation and Traffic;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Wildfire

5.2 Significant Environmental Effects that Cannot Be Avoided

Section 15126.2(b) of the *CEQA Guidelines* requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. Potential environmental effects of the project and proposed mitigation measures are discussed in detail in Chapter 4 of this EIR.

After further study and environmental review, as provided in this EIR, it was determined that project-level and cumulative impacts in the following areas would be significant and unavoidable for the project, even with the incorporation of reasonable mitigation measures, which would attempt to reduce impacts to the greatest extent feasible.

As shown in **Table 5-1: Summary of Significant and Unavoidable Impacts of the Project**, impacts in the following areas would be significant and unavoidable, even with the incorporation of feasible mitigation measures that attempt to reduce impacts to the extent feasible.

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
Aesthetics	There would be no significant and unavoidable project impacts.	The project would result in significant and unavoidable impacts related to visual character despite implementation of mitigation. While other projects in the region would also be required to implement various mitigation measures to reduce impacts, the cumulative conversion of thousands of acres of largely undeveloped land in the valley region in a predominantly rural area to solar energy production uses cannot be mitigated to a degree that impacts are no longer significant. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6, the project's contribution to significant impacts associated with visual character in the San Joaquin Valley would be cumulatively significant and unavoidable .
Agricultural Resources	Kern County has adopted a threshold of significance regarding cancellation of an open space contract specifically for property within County managed land. The project would result in the loss of 486 acres of Williamson Act Land which would exceed the 100 acre County criteria. These impacts would be significant and unavoidable as it relates to loss of agricultural land within the County.	cumulative project impacts would be significant and unavoidable .
Air Quality	Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-8, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM _{2.5} along with indirect linkages of criteria pollutants and COVID-19 on vulnerable populations could result in significant and unavoidable project-level impacts.	Despite implementation of Mitigation Measures MM 4.3-1 through MM 4.3-8, construction emissions generated by the project and related projects could cumulatively combine and result in a temporary significant and unavoidable cumulative impact. Cumulative operational impacts would be less than significant. Impacts would be less than significant for the Interconnection to Arco Substation with PG&EE's standard best management practices and APMs, and no mitigation would be required for the Interconnection with Arco. The cumulative temporary construction impacts are considered significant and unavoidable .

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
Biological Resources	There would be no significant and unavoidable project impacts.	As development increases within the undeveloped areas of Kern County, impacts to biological resources within the region are increasing on a cumulative level. When considered in combination with other existing and reasonably foreseeable projects in the surrounding flat, open portions of Valley Region south to the Tehachapi foothills, west to the coast range, east to the Sierra Nevada, and north beyond the Kern County boundary, the proposed project has the potential to further reduce local wildlife movement. Even with the implementation of project-specific Mitigation Measures MM 4.4-1 through MM 4.4-15, the cumulative impacts to transient wildlife species would be significant and unavoidable .
Wildfire	There would be no significant and unavoidable project impacts.	Given the location is subject to high wind speeds, and is a rural area with limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a cumulative significant and unavoidable impact .

5.3 Irreversible Impacts

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

Build-out of the project would commit nonrenewable resources during project construction. During project operations, oil, gas, and other fossil fuels and nonrenewable resources would be consumed, primarily in the form of transportation fuel for project employees. Therefore, an irreversible commitment of nonrenewable resources would occur as a result of long-term project operations. However, assuming that those commitments occur in accordance with the adopted goals, policies, and implementation measures of the Kern County General Plan as a matter of public policy, those commitments have been determined to be acceptable. The Kern County General Plan ensures that any irreversible environmental changes associated with those commitments will be minimized.

5.4 Growth Inducement

The Kern County General Plan recognizes that certain forms of growth are beneficial, both economically and socially. Section 15126.2(d) of the *CEQA Guidelines* provides the following guidance on growth-inducing impacts:

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

Growth inducement can be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the project would not induce substantial growth. Construction staff not drawn from the local labor pool would be anticipated to stay in the local hotels in local communities. During the operational phase, the project would have up to 5 full-time equivalent (FTE) personnel (or personnel hours totaling 5 FTE positions (i.e., an average of 200 personnel hours per week), who would commute to the site for operational and maintenance activities. It is anticipated that the construction and operational workforce would commute to the project each day from local communities, and would likely come from the existing labor pool as construction workers travel from site to site as needed.

Although the project would contribute to the energy supply, which could support growth, the development of power infrastructure is a response to increased market demand. It does not induce new growth. Kern County planning documents already permit and anticipate a certain level of growth in the area of the project 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, any link between the project and growth in Kern County would be speculative.

In *Kerncrest Audubon Society v. Los Angeles Department of Water and Power*, the analysis of growth-inducing effects contained in the EIR for the Pine Tree Wind Development Project was challenged. Plaintiffs argued that the discussion was too cursory to provide adequate information about how additional electricity generated by the project would sustain further growth in the Los Angeles area. The court held that the additional electricity that the project would produce was intended to meet the current forecast of growth in the Los Angeles area. As such, the wind development project would not cause growth, and so it was not reasonable to require a detailed analysis of growth-inducing impacts. In addition, EIRs for similar energy projects have contained similarly detailed analyses of growth-inducing impacts. Their conclusions that increasing the energy supply would not create growth has been upheld, because: (1) the additional energy would be used to ease the burdens of meeting existing energy demands within and beyond the area of the project; (2) the energy would be used to support already-projected growth; or (3) the factors affecting growth are so multifarious that any potential connection between additional energy production and growth would necessarily be too speculative and tenuous to merit extensive analysis. Thus, as has been upheld in the courts, this level of analysis provided in this EIR is adequate to inform the public and decision makers of the growth-inducing impacts of the project.

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Chapter 6 Alternatives

6.1 Introduction

The California Environmental Quality Act (CEQA) requires that an EIR describe a range of reasonable alternatives to the project or to the location of the project that could feasibly avoid or lessen any significant environmental impacts of the project while attaining most of the project's basic objectives. An EIR also must compare and evaluate the environmental effects and comparative merits of the alternatives. This chapter describes alternatives considered but eliminated from further consideration (including the reasons for elimination), and compares the environmental impacts of several alternatives retained with those of the project.

The following are key provisions of the *CEQA Guidelines* (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its site that 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 No Project Alternative shall be evaluated, along with its impacts. The no-project analysis shall discuss the existing conditions at the time the notice of preparation was 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.
- The range of alternatives required in an EIR is governed by a “rule of reason.” Therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner that fosters meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in *CEQA Guidelines* Section 15126.6(f)(1)) are environmental impacts, site suitability, economic viability, social and political acceptability, technological capacity, availability of infrastructure, General Plan consistency, specific plan consistency, regulatory limitations, jurisdictional boundaries, and whether the project proponent could reasonably acquire, control, or otherwise have access to an alternative site. If an alternative has effects that cannot be reasonably identified, if its implementation is remote or speculative, and if it would not achieve the basic project objectives, it need not be considered in the EIR.

6.1.1 Significant Impacts of the Project after Mitigation

Implementation of the proposed project has the potential to have significant adverse effects on:

- Aesthetics (cumulative)
- Agriculture and Forestry Resources (project and cumulative)
- Air quality (project and cumulative – temporary construction only)
- Biological resources (cumulative only)
- Wildfire (cumulative only)

Even with the mitigation measures described in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR, impacts in these issue areas would be significant and unavoidable. Therefore, per the *CEQA Guidelines*, this section discusses alternatives that are capable of avoiding or substantially lessening effects on these resources. The significant and unavoidable impacts of the proposed project are discussed below.

Aesthetics

With implementation of Mitigation Measures MM 4.1-4 through MM 4.1-6, impacts would be less than significant.

While other projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar PV production uses cannot be mitigated to a degree that impacts are no longer significant. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6, the project's contribution to significant impacts associated with visual character in the San Joaquin Valley would be cumulatively significant and unavoidable.

Agricultural Resources

Implementation of the project would require the cancellation of a Williamson Act Contract for approximately 480 acres of the project site. Therefore, the project would require the cancellation of an open space contract made pursuant to the California Lands Conservation Act of 1965 for a parcel over 100 acres. No feasible mitigation is available to reduce impacts related to the cancellation of the Williamson Act Contract, therefore, impacts related to the cancellation of an open space contract would be significant and unavoidable. However, there are no active agricultural uses on the project site, and the project would not convert agricultural land to a non-agricultural use. Further, development would not result in any significant environmental impacts on adjacent properties from construction and operation activities following implementation of MM 4.9-1 and MM 4.9-3. As a result, the proposed project would not include activities restricting or impairing agricultural production on adjacent land or nearby properties.

Although the conversion of agricultural land to non-agricultural uses is affected by numerous factors, the project's direct conversion of agricultural land, along with the cancellation of existing Williamson Act Contracts, is directly and cumulatively significant when considered in connection with effects of other closely related past projects, current projects, and of probable future projects. Because no feasible mitigation is available, impacts to agricultural resources are considered significant and unavoidable.

Air Quality

With project implementation, long-term increases in operational emissions of primary concern within the region (i.e., ROG, NOX, CO, SOX, and PM10, and PM2.5) would be minimal and would not exceed applicable significance thresholds. However, even with implementation of Mitigation Measures MM 4.3-1, through MM 4.3-8 required to reduce the project's regional and localized health effects associated with criteria air pollutants and COVID-19; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints. As such, the impacts are conservatively considered to be significant and unavoidable.

If construction of the proposed projects in the project's vicinity overlap, emissions of NOx and PM10 would be cumulatively considerable. Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-8, cumulative temporary construction impacts are considered significant and unavoidable. Additionally, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM2.5 along with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations would result in significant and unavoidable cumulative level impacts. The SJVAPCD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the San Joaquin Valley Air Basin at the present time and it has not provided methodology to assess the specific correlation between mass emission generated and the effect on public health and welfare. Therefore, cumulative impacts for criteria pollutants are considered significant and unavoidable.

Biological Resources

As analyzed in Section 4.4 Biological Resources, with implementation of mitigation measures MM 4.4-1 through MM 4.4-15, project impacts on biological resources, would be reduced to less-than-significant levels. However, as large-scale energy projects and urbanization pressures increase within Kern County, impacts to biological resources within the region are expanding on a cumulative level. As described in Table 3-4, Cumulative Projects List, in Chapter 3, Project Description, of this EIR, other projects with similar species effects have been completed or are planned within the San Joaquin Valley. In general, bioregions are defined through physical and environmental features, including watershed boundaries and soil and terrain characteristics. Areas to the east and south of the Tehachapi Mountains, and to the west of the San Emigdio Mountains, are within a different bioregion and are separated from the project site by the natural geography that these ranges present. I-5, SR-99 and the California Aqueduct, in the central and western portions of the southern San Joaquin Valley, also act as a barrier to wildlife movement.

A number of special-status species have the potential to occur on the project site and in the surrounding vicinity. Implementation of the project in addition to the other projects underway or proposed within Kern County would impact transient wildlife species, including burrowing owls, other raptors, and San Joaquin kit fox. The project site contains habitat that support insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species, many of which are expected to utilize the project site on a transient basis, if at all. Given the number of present and reasonably foreseeable future development projects in the San Joaquin Valley, the project, when combined with other projects, would have an incremental contribution to cumulative loss of foraging and nesting habitat for special-status species. Implementation of Mitigation Measures would reduce the project's contribution to potential impacts to biological resources to less than significant levels on the project-level

scale. However, the project, when combined with other related development projects proposed throughout the County, the cumulative impact would be significant and unavoidable.

Wildfire

While the project would not result in impacts related to wildfire, including the impairment of an adopted emergency response plan; the exposure of project occupants to pollutant concentrations from a wildfire; the installation or maintenance of associated infrastructure; and the exposure of people or structure to significant risks as a result of runoff, post-fire slope instability, or drainage changes, given the project's location in a rural area and limited infrastructure in the vicinity of the project site, the project and related projects would have a significant and unavoidable cumulative impact related to wildfire.

Given the project's location in a rural area, the project and related projects have the potential to result in a cumulative impact related to exposure of project occupants to pollutant concentrations from a wildfire. Related projects may require associated infrastructure such as roads, fuel breaks, and power lines that could exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. These projects would be reviewed by Kern County for land use and zoning consistency and compliance with applicable requirements, and potentially analyzed for environmental impacts. The placement of infrastructure would adhere to all fire codes to minimize the potential fire risk such as siting and design. However, given the location in a rural area and limited infrastructure, the project and related projects also have the potential to result in a cumulative impact related to the installation or maintenance of associated infrastructure.

Furthermore, some related projects could be proposed in areas that could expose people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. All projects would be required to adhere to Kern County's zoning and land use designations and codes, State and local fire codes, and regulations associated with drainage and site stability. These regulations, policies, and codes would reduce the potential for exposing people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. Each project would require a site-specific SWPPP and a design-level geotechnical report to minimize potential flooding, runoff, or slope instability impacts that may occur after a fire event. However, with the implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1, the project would not expose people or structures to significant risks due to post-fire slope instability or drainage changes and would have a less than significant impact.

Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

6.2 Project Objectives

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (*CEQA Guidelines* Section 15126.6(c)). As described in Chapter 3, *Project Description*, of this EIR the

following objectives have been established for the project and will aid decision makers in the review of the proposed project and associated environmental impacts:

- Assist the State of California in achieving or exceeding its Renewable Portfolio Standard (RPS), Senate Bill 350, Senate Bill 100, and the California Global Warming Solutions Act (Assembly Bill 32) and greenhouse gas emissions reduction objectives by developing and constructing new California RPS-qualified, solar power generation facilities.
- Develop a commercially viable solar power generation and battery storage facility that would support the economy by investing in the local community, creating local construction jobs, and increase tax and fee revenue to the County.
- Develop a project which would generate a maximum of 500 jobs during construction and approximately 5 permanent jobs during operation to provide increased business for local contractors and vendors.
- Produce and transmit electricity at a competitive cost.
- Assist Kern County in achieving the goal in the Energy Element of its General Plan to develop large-scale solar energy development as a major energy source in the County.
- Help Southern California Community Choice Aggregators in fulfilling their local renewable energy procurement goals.

6.3 Overview of the Proposed Project

The proposed PV facility and associated infrastructure would enable the generation of up to 60 megawatts (MW) of renewable electrical energy supported by a Battery Energy Storage System (BESS) capable of storing approximately 55 MW of energy. The BESS would be located on approximately 5 acres of the overall 640 acres of privately-owned land. The project's permanent facilities would include, but are not limited to, service roads, a power collection system, inverter stations, transformer systems, transmission lines, electrical switchyards, project substations, energy (battery) storage system, and operations and maintenance facilities.

Implementation of the project as proposed includes the following requests:

- Conditional Use Permit (CUP 10, Map No. 3) to allow for the construction and operation of an approximate 60 MW solar facility, as well as ancillary structures including a 55 MW BESS, on the 640-acre site within the A (Exclusive Agriculture) zone district pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.
- Conditional Use Permit (CUP 14, Map No. 3) to allow for the construction and operation of a microwave communications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.F of the Kern County Zoning Ordinance.
- Cancellation of a Williamson Act Contract to be processed for APN 043-210-17 within the proposed CUP boundary.

Output from the proposed solar PV facility would be transferred via electrical conduits and electrical conductor wires to an on-site substation in the northwest corner of APN 043-210-17. The proposed substation would include transformers, breakers, switches, meters, and related equipment. Interconnection equipment, including the control house, would be installed aboveground and underground within the footprint of the substation. The footprint of the substation would be approximately 200 by 200 feet and the maximum height would be approximately 75 feet.

The 70 kV gen-tie would interconnect the Project Substation to the existing Pacific Gas and Electric (PG&E) Arco Substation. The gen-tie is proposed to extend to the west from the Project Substation for approximately 0.68 miles. The gen-tie right-of way would be from 25- to 75-feet-wide. Approximately 30 new poles would be installed to accommodate the gen-tie. The new poles would be constructed of either steel or wood at a maximum of 90 feet tall. To allow for project connection, the existing Arco Substation would need be modified in order to accommodate a new 70 kV bus terminal required by the project. This work would be performed by PG&E and would include the construction of new substation equipment adjacent to the existing substation equipment.

6.4 Overview of Alternatives to the Project

Under CEQA, and as indicated in California Public Resources Code (PRC) Section 21002.1(a), the identification and analysis of alternatives to a project is a fundamental aspect of the environmental review process and is required to ensure the consideration of ways to mitigate or avoid the significant environmental effects of a project. Based on the significant environmental impacts of the proposed project, the aforementioned objectives established for the proposed project, and the feasibility of the alternatives considered, four alternatives, including the No Project Alternative as required by CEQA, are considered in this chapter and summarized in **Table 6-1: Summary of Development Alternatives**. The Environmentally Superior Alternative, as required by CEQA, is described in Section 6.8, *Environmentally Superior Alternative*, below.

6.4.1 Alternative 1: No Project Alternative

The *CEQA Guidelines* require EIRs to include a No Project Alternative for the purpose of allowing decision makers to compare the effects of approving the proposed project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the 60 MW solar PV facility and associated facilities on the 640-acre site would not occur. No collection lines would be constructed. The No Project Alternative would not require Conditional Use Permits (CUP), and Williamson Act Land Use Contract Cancellations for construction and operation of a 60 MW solar project. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped agriculture land. No physical changes would be made to the project site.

6.4.2 Alternative 2: Zoning Build-Out Alternative

Alternative 2, the Agricultural Production Alternative, would develop the project site for active agricultural production. The project site is designated as Kern County General Plan Map Codes 8.3 (Extensive Agriculture; 8.3/2.5 (Extensive Agriculture/Flood Hazard Overlay). No solar facilities would be developed under this alternative and, therefore, no Conditional Use Permits or Williamson Act Contract cancellations would be required for this alternative. The project site would be developed in accordance with the existing agricultural zone designations.

Implementation of Alternative 2 would consist of developing the project site under the current land use classifications of 8.3 Extensive Agriculture and 8.3/2.5 (Extensive Agriculture/Flood Hazard Overlay). The 8.3 (Extensive Agriculture land use designation applies to areas devoted to the production of irrigated crops or having a potential for such use. Typical uses include irrigated cropland, farm facilities and related uses,

livestock grazing, water storage and groundwater recharge areas, mineral, aggregate, and petroleum exploration and extraction, public utility uses, and agricultural industries.

Given the land use and zoning designations described above, this alternative would include the development of agricultural production on the entire project site and associated infrastructure for agricultural production such as irrigation systems. No CUPs for solar facility construction and operation would be required for this alternative. In addition, no Williamson Act Land Use Contract Cancellations would be required under this alternative as the proposed uses would be allowed under these contracts.

6.4.3 Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, a 30% reduction in developable acreage, and a 30% reduction in MW is proposed. To achieve this a solar facility with the capacity to generate up to 42 MW of renewable electric energy. Under Alternative 3, the project acreage would be reduced to 448 acres (from the 640-acres proposed under the project). The overall developable acreage under Alternative 3 would be 238-acres. The gen-tie interconnection would remain unchanged. Development Alternative 3 would include construction of a substation, 27 MW energy storage facility, and associated infrastructure, as under the project. Eliminating development 30% of the developable acreage from the project would reduce the project's total generation capacity from 60 MW to 42 MW, and reduce the developed area from approximately 640 acres to approximately 448 acres. Similar to the project, this alternative would require issuance of CUPs and Williamson Act Contract Cancellations for construction and operation of a commercial solar electrical generating facility.

6.4.4 Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Under this alternative, no new land would be developed or altered. However, depending on the type of solar modules installed and the type of tracking equipment used (if any), a similar or greater amount of acreage (i.e., greater than 640 acres of total rooftop area) may be required to attain project's capacity of 60 MW of solar PV generating capacity. Because of space or capital cost constraints, many rooftop solar photovoltaic systems would be fixed-axis systems or would not include the same type of sun-tracking equipment that would be installed in a freestanding utility-scale solar PV project and, therefore, would not attain the same level of efficiency with respect to solar energy generation. Alternative 4 would generate 60 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed on site by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

Table 6-1: *Summary of Development Alternatives*, provides a summary of the relative impacts and feasibility of each alternative. A complete discussion of each alternative is also provided below.

TABLE 6-1: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 640 acres would generate up to 60 MW of electricity with the capacity to store up to 55 MW of energy. Approval of two Conditional Use Permits (CUPs) (one for construction and operation of commercial solar electrical generating facilities, one for communications towers), cancellation of a Williamson Act contract would be required.	N/A
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul style="list-style-type: none"> • Required by CEQA • Avoids need for CUPs and Williamson Act contract cancellation • Avoids all significant and unavoidable impacts • Greater impacts to GHGs • Less impact in all remaining environmental issue areas • Does not meet any of the project objectives
Alternative 2: Zoning Build-Out Alternative	Project site would be developed with active agricultural production as allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions.	<ul style="list-style-type: none"> • Avoids need for CUPs and Williamson Act Contract Cancellations • Similar impacts to biological resources, hazards and hazardous materials • Less impact to aesthetics, and agricultural resources • Greater impacts to energy, greenhouse gases (GHG) emissions, hydrology and water quality, and utilities and service systems as it relates to water supply. • Irrigated farming would have increased water demand • Less overall impacts in all remaining environmental issue areas • Does not meet any of the project objectives

TABLE 6-1: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 3: Reduced Acreage Alternative	Construction and operation of one solar facility on approximately 448 acres. This alternative would construct a solar array field capable of generating approximately 42 MW of electricity and storing 27 MW of electricity, thereby reducing the project's renewable energy output by 30 percent. The project site would require issuance of CUPs and a Williamson Act contract cancellation.	<ul style="list-style-type: none"> • Similar impacts to greenhouse gas emissions, hazards and hazardous materials, land use and planning, noise, public services, transportation and traffic, and utilities and service systems • Decreased GHG offset benefits to meet project objectives • Less impact in all remaining environmental issue areas • Does not meet all the project objectives
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 60 MW of PV solar distributed on rooftops throughout the valley region of Kern County. Electricity generated would be for onsite use only.	<ul style="list-style-type: none"> • Avoids need for solar facility CUPs and Williamson Act Contract Cancellations at the project site but may require other entitlements (such as a CUP or variance) on other sites • Avoid significant and unavoidable impacts associated with aesthetics, air quality, biological resources, and wildfire • Greater impacts to GHG emissions land use and planning, and noise • Similar impacts energy • Less impact in all remaining issue areas • Does not meet all the project objectives

6.5 Alternatives Considered and Rejected

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (*CEQA Guidelines* Section 15126.6(c)). Alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, also do not need to be considered (*CEQA Guidelines* Section 15126(f)(2)). Kern County considered several alternatives to reduce impacts to aesthetics (project and cumulative), air quality (cumulative), biological resources (cumulative), and wildfire (cumulative). Per CEQA, the lead agency may make an initial determination as to which alternatives are feasible and warrant further consideration, and which are infeasible. The following alternatives were initially considered but were eliminated from further consideration in this EIR because they do not meet project objectives or were infeasible:

- Wind Energy Project Alternative
- Industrial Power Plant Alternative
- Alternative Site Alternative

6.5.1 Wind Energy Project Alternative

The Wind Energy Project Alternative would involve the use of wind energy as an alternative to development of a solar site. Similar to solar power, energy production from wind is an alternative to energy production from coal, oil, or nuclear sources. Wind energy provides the following benefits:

- It is a renewable and infinite resource.
- It is free of any emissions, after installation, including carbon dioxide (GHG).
- It is a free resource after the capital cost of installation (excluding maintenance).

In addition, energy production from wind power would not require the significant water usage associated with coal, nuclear, and combined-cycle sources. Turbines used in wind farms for commercial production of electric power are usually three-bladed units that are pointed into the wind by computer-controlled motors. The wind farm would consist of a group of wind turbines placed where electrical power is produced. The individual turbines would be interconnected with a medium-voltage power collection system and a communications network. At a substation, the medium-voltage electrical current would be increased through a transformer before connection to the high-voltage transmission system. 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. Wind turbines would also have the potential to affect avian species in the local area. In addition, in order for wind turbines to produce an equivalent 60 MW of power that the project would produce, the alternative would require more space than what the project site currently accommodates and, consequently, the project site would need to be expanded.

As noted above, some of the project objectives are to develop a solar project that will help meet the increasing demand for clean, renewable electrical power, as well as help California meet its statutory and regulatory goals of generating more renewable power with minimum potential for environmental effects by using proven and established PV technology that is efficient, requires low maintenance and is recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels, require FAA lighting and are more visible from many viewpoints.
- It may result in additional/greater biological resources impacts to avian species than the project.
- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.
- It may result in increased land use and planning impacts associated with the project due to the need for an increased project site.

6.5.2 Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 60 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation. However, byproducts of industrial power plant operation need to be considered in both design and operation. When waste heat that results from the finite efficiency of the power cycle is not recovered and used as steam or hot water, it must be released to the atmosphere, and often uses a cooling tower as a cooling

medium (especially for condensing steam). The flue gas from combustion of the fossil fuels is discharged to the air and contains carbon dioxide and water vapor as well as other substances, such as nitrogen, nitrogen oxides, and sulfur oxides. Furthermore, unlike the proposed project, fossil fuel-powered plants are major emitters of GHGs. In addition, industrial power plants generally involve the construction of large structures, such as cooling towers and gas stacks, as well as a large number of employees to operate the facility on a 24/7 basis 365 days a year. Accordingly, the development of an industrial power plant would typically result in greater adverse impacts related to: (1) aesthetics and the local visual setting of the project area; (2) air quality and GHG emissions; (3) land use and planning conflicts with the rural development of the surrounding area; (4) noise from the plant operations; (5) traffic from increased employment at the facility; and (6) demand on public utilities, including water and waste disposal.

As noted above, some of the objectives for the proposed project are to develop a solar project that would help meet the increasing demand for clean, renewable electrical power as well as help California meet its statutory and regulatory goals of generating more renewable power with minimum potential for environmental effects. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would result in additional/greater impacts than the proposed project including aesthetics, air quality, GHG emissions, land use and planning, noise, transportation and traffic, and public utilities, including water use and disposal.
- Depending on siting, it may also result in greater biological resources impacts than the project.
- It would not contribute to the statewide renewable energy and GHG reduction objectives as this alternative would use non-renewable energy to produce electricity.

6.5.3 Alternative Site

This alternative would involve the development of the proposed project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in the San Joaquin Valley of the County. This alternative is assumed to involve construction of a 60 MW PV solar facility and 55 MW BESS on a site totaling 640 acres. *CEQA Guidelines* Section 15126.6(f)(2)(a) states that the key and initial step in considering an alternative site is whether “any of the significant effects of the project would be avoided or substantially lessened” in relocating the project, while remaining consistent with the same basic objectives of the proposed project.

The valley region of the County has attracted renewable energy development applications that are being proposed for vacant land or land with a history of agricultural uses. The availability of alternative sites is constrained by the renewable energy market itself. While other sites with similar size, configuration, and use history may exist in the valley region, alternative project sites in the area are likely to have similar project and cumulatively significant impacts after mitigation, including cumulatively significant impacts to aesthetics, agricultural resources, and biological resources. This is based on the known general conditions in the area and the magnitude of the project.

In addition, alternative sites for the project are not considered to be “potentially feasible,” as there are no suitable sites within the control of the project proponent that would reduce project impacts. The potential amount of available, similar sites is further reduced because unlike the proposed project, alternative sites

may not include sites with close proximity to transmission infrastructure. As noted above, alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated because it would not avoid or substantially reduce the significant environmental effects of the proposed project.

6.6 Analysis Format

In accordance with *CEQA Guidelines* Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the project. Furthermore, each alternative is evaluated to determine whether the project objectives identified in Chapter 3, *Project Description*, of this EIR would be mostly attained by the alternative. The project's impacts that form the basis of comparison in the alternatives analysis are those impacts which represent a conservative assessment of project impacts. The evaluation of each of the alternatives follows the process described below.

- a) The net environmental impacts of the alternative after implementation of reasonable mitigation measures are determined for each environmental issue area analyzed in this EIR.
- b) Post-mitigation significant and less than significant environmental impacts of the alternative and the project are compared for each environmental issue area as follows:
 - Less: Where the impact of the alternative after feasible mitigation would be clearly less adverse than the impact of the project, the comparative impact is said to be "less."
 - Greater: Where the impact of the alternative after feasible mitigation would be clearly more adverse than the impact of the project, the comparative impact is said to be "greater."
 - Similar: Where the impacts of the alternative after feasible mitigation and the project would be roughly equivalent, the comparative impact is said to be "similar."
- c) The comparative analysis of the impacts is followed by a general discussion of whether the underlying purpose for the project, as well as the project's basic objectives would be substantially attained by the alternative.

Table 6-2: Comparison of Alternatives, provides a summary and side-by-side comparison of the proposed project with the impacts of each of the alternatives analyzed. Please note that in Alternatives 1 through 4 in **Table 6-2: Comparison of Alternatives**, the references to "less, similar, or greater," refer to the impact of the alternative compared to the proposed project, and the impacts "no impact (NI), less than significant (LTS), or significant and unavoidable (SU)," in the parentheses refer to the significant impact of the specific alternative.

TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Zoning Build- Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and Unavoidable (cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agricultural and Forestry Resources	Significant and Unavoidable (cumulative)	Less (NI)	Less (NI)	Similar (SU)	Less (NI)
Air Quality	Significant and Unavoidable (project and cumulative – temporary construction only)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	Less (NI)	Similar (SU)	Less (SU)	Less (LTS)
Cultural Resources	Less than Significant with Mitigation	Similar (NI)	Greater (LTS)	Similar (LTS)	Similar (LTS)
Energy	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Similar (LTS)
Geology and Soils	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than Significant	Greater (LTS)	Greater (LTS)	Greater (LTS)	Greater (LTS)
Hazards and Hazardous Materials	Less than Significant with Mitigation	Less (NI)	Similar (LTS)	Similar (LTS)	Less (LTS)
Hydrology and Water Quality	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Land Use and Planning	Less than Significant with Mitigation	Less (NI)	Less (NI)	Similar (LTS)	Greater (LTS)
Mineral Resources	Less than Significant	Less (NI)	Similar (LTS)	Similar (LTS)	Less (NI)
Noise	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Similar (LTS)
Public Services	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation and Traffic	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Tribal Cultural Resources	Less than Significant with Mitigation	Similar (NI)	Greater (LTS)	Similar (LTS)	Similar (NI)

TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Zoning Build- Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Utilities and Service Systems	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Wildfires	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	Less (SU)	Greater (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Some	None	All
NI = No Impact LTS = Less than Significant SU = Significant and Unavoidable					

6.7 Impact Analysis

6.7.1 Alternative 1: No Project Alternative

Environmental Impact Analysis

Aesthetics

Under the No Project Alternative, no development would take place on the project site. The project site would remain in its current state as undeveloped land and no change to the scenic vistas or existing visual character of the site would occur. Impacts to scenic resource and daytime and nighttime views in the area would not occur. Therefore, there would be no impact and the No Project Alternative would result in less impact to aesthetics compared to the proposed project.

Agricultural and Forestry Resources

Under the No Project Alternative, the project site would remain undeveloped and solar panels would not be installed. The project site would remain in its current state, as undeveloped agricultural land containing sparse vegetation. As such, the No Project Alternative would not involve changes to the existing environment which could result in the conversion of Farmland or forest land to non-agricultural or non-forest uses. In addition, no Williamson Act Land Use Contract Cancellations would be required under this alternative as the proposed uses would be allowed under these contracts. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to agricultural and forestry resources compared to the proposed project.

Air Quality

Under the No Project Alternative, the project site would remain undeveloped and there would be no construction activities or operational activities that would generate air emissions. The No Project Alternative would not contribute to a cumulative net increase of criteria pollutant in the projects' region. Therefore, there would be no impact to air quality and the No Project Alternative would result in less impacts related to air quality compared to the proposed project.

Biological Resources

Under the No Project Alternative, the project site would remain undeveloped and existing biological resources on the project site, including special-status plant and wildlife species, would remain undisturbed since no construction or operation would occur. The project site would remain in its current state, as undeveloped agricultural land containing sparse vegetation, and would not contribute to a cumulative loss of foraging and nesting habitat for BNLL, Prairie falcon, Swainson's Hawk, Western burrowing owl, California horned lark, loggerhead shrike, American badger, Giant kangaroo rat, Nelson's antelope squirrel, and San Joaquin kit fox and migratory bird species that may utilize habitat on the project site. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to biological resources compared to the proposed project.

Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. Therefore, disturbance to potential historical resources, archeological resources, or human remains located on site would not occur and this alternative would not require mitigation. There would be no impact and the No Project Alternative would result in less impacts related to cultural resource compared to the proposed project.

Energy

Under the No Project Alternative, the project site would remain undeveloped and no energy consumption activities would occur. As such, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to energy compared to the proposed project.

Geology and Soils

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. As such, the No Project Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault or strong seismic ground shaking; result in substantial soil erosion or loss of topsoil; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. Therefore, there would be no impact and the No Project Alternative would result in fewer impacts related to geology and soils compared to the proposed project.

Greenhouse Gas Emissions

Under the No Project Alternative, emissions associated with construction and operation of a solar energy facility would not occur. Therefore, those emissions that contribute to GHGs would be eliminated and no impacts would occur related to generating emissions that may have a significant impact on the environment or consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. However, the potential offset of GHG emissions resulting from operation of the solar power generating facility would not be realized. Impacts would be less than significant under this alternative; however, impacts from implementation of this alternative would be greater than those of the project as it would not offset GHG emissions.

Hazards and Hazardous Materials

Under the No Project Alternative, the project site would remain undeveloped, and no construction or operational activities would occur. The project site would remain in its current condition. As such, this alternative would not involve use, transport, and disposal of hazardous materials associated with the project site; 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; or expose people or structures to significant risk of loss, injury, or death involving wildland fires. Therefore, there would no impact and the No Project Alternative would result in less impacts related to hazards and hazardous materials compared to the proposed project.

Hydrology and Water Quality

Under the No Project Alternative, the project site's existing hydrology and water quality would remain unchanged as no development or ground disturbance would occur on the project site. As such, this alternative would not violate water quality standards or waste discharge requirements; substantially alter the existing drainage pattern of the site or area in a manner that would substantially increase the rate or amount of surface runoff which would result in flooding on site or off site; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage system; contribute to inundation by a flood hazards, tsunami, or seiche; or conflict with or obstruct implementation of a water quality control plan or groundwater management plan. Therefore, there would be no impact and the No Project Alternative would result in less impact related to hydrology and water quality compared to the proposed project.

Land Use and Planning

The No Project Alternative would not develop any new uses at the project site, and would thus not require any of the submitted land use applications. Current land uses on the site are consistent with the zoning and Kern County General Plan land use classifications. As such, the No Project Alternative would not cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be no impact and the No Project Alternative would result in less impact related to land use and planning compared to the proposed project.

Mineral Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. There are no mineral resources on the project site or in the project area. As such, the No Project Alternative would not 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. Therefore, there would be no impact and the No Project Alternative would result in less impact related to mineral resources compared to the project.

Noise

Under the No Project Alternative, the project site would remain undeveloped. Noise sources from construction and operation would not be present on site, and existing noise conditions would remain the same. As such, the No Project Alternative would not result in generation of a substantial temporary or permanent increase in ambient noise levels or generate excessive ground-borne vibration. Therefore, there would be no impact and the No Project Alternative would result in less impact related to noise compared to the proposed project.

Public Services

Under the No Project Alternative, the project site would remain undeveloped and no new demand for fire or police protection services would occur. Furthermore, no new demand for schools, parks, or other government facilities would occur. As such, the No Project Alternative would not result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, or other government

facilities. Therefore, there would be no impact and the No Project Alternative would result in less impact related to public services compared to the proposed project.

Transportation and Traffic

Under the No Project Alternative, the solar facilities would not be constructed and this alternative would not introduce construction and operational-related trips. Existing traffic patterns and volumes on nearby roadways would remain unchanged. As such, the No Project Alternative would not conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities and not conflict or be inconsistent with *CEQA Guidelines* Section 15064.3(b). In addition, the No Project Alternative would not substantially increase hazards due to a geometric design feature or result in inadequate emergency access. Therefore, there would be no impact and the No Project Alternative would result in less impact related to transportation and traffic than the project.

Tribal Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. Record searches returned negative results and failed to reveal the presence of known Native American resources within the project area. Further, no potential tribal resources were identified through tribal consultation. Therefore, due to the absence of ground disturbance activities and the lack of identified tribal cultural resources in the project area, the No Project Alternative would not cause a substantial adverse change in the significance of a tribal cultural resources with cultural value to a California Native American tribe 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 as a resource determined by the lead agency. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to tribal cultural resource compared to the proposed project.

Utilities and Service Systems

Under the No Project Alternative, the solar facilities would not be constructed and there would be no new demand for utilities and service systems on the project site. As such, the No Project Alternative would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; impact water supplies; generate solid waste in excess of State or local standards; or conflict with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, there would be no impact and the No Project Alternative would result in less impact related to utilities and service systems compared to the proposed project.

Wildfires

Under the No Project Alternative, the solar facilities would not be constructed. As such, the No Project Alternative would not expose occupants to pollutant concentrations from a wildfire; require the installation or maintenance of associated infrastructure; or expose people or structures to significant risks, in each case related to the project. However, under the No Project Alternative, the development of other past, present or reasonably foreseeable future projects in the vicinity would result in a cumulatively significant and unavoidable impact to the risks associated with wildfires. Therefore, there would be no impact for the No Project Alternative on an individual basis, but on a cumulative basis with other past, present or reasonably

foreseeable projects, the No Project Alternative (as well as the proposed project) would result in significant and unavoidable impact to risks associated with wildfires.

Comparison of Impacts

The No Project Alternative would avoid creating nearly all of the significant and unavoidable impacts associated with the proposed project. This alternative would result in less impact to all remaining environmental issue areas with the exception of Wildfire and GHGs; since this alternative would not offset GHGs through the operation of a solar energy facility, impacts to GHGs would be greater under this alternative.

Relationship to Project Objectives

The No Project Alternative would not achieve any of the project objectives listed above in Section 6.2, *Project Objectives*, including assisting California in reducing GHG emissions. Although this alternative would create less environmental impacts overall, the objectives that shape the project would not be realized under this alternative.

6.7.2 Alternative 2: Zoning Build-Out Alternative

Environmental Impact Analysis

Aesthetics

Under the Zoning Build-Out Alternative, the 640-acre project site, which is zoned as A (Exclusive Agriculture) would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. Development of the project site with agricultural uses would be visually similar to the types of uses that are within the project area and, thus, potential impacts to visual character would be reduced under this alternative. As such, significant and unavoidable impacts related to visual resources would be eliminated under this alternative. Therefore, impacts would be less than significant under the General Plan/ Zoning Build-Out Alternative and, thus, this alternative would result in less aesthetic impacts compared to the project.

Agriculture and Forestry Resources

Under the Zoning Build-Out Alternative, the 640-acre project site, which is zoned as A (Exclusive Agriculture) would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. Under this alternative, there would be no zoning change, and approximately 640 acres of land would be developed for agricultural uses, therefore increasing the total amount of active agricultural land in Kern County. In addition, no Williamson Act Land Use Contract Cancellations would be required under this alternative as the proposed uses would be allowed under these contracts. Therefore, there would be no impact under the Zoning Build-Out Alternative and, thus, this alternative would result in less agricultural resource impacts as the proposed project.

Air Quality

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. The Zoning Build-Out Alternative would not result in short-term construction emissions, as no development would occur on the project site. Operational emissions associated with the proposed agricultural uses under the Zoning Build-Out Alternative would be greater due to routine emissions associated with agricultural vehicles, livestock emissions, residential uses etc. Given this increase, this alternative would result in greater air quality impacts in the air basin than the proposed project.

As it relates to impacts on implementation of the applicable air quality plan, project cumulative construction impacts would be significant and unavoidable. The Zoning Build-Out Alternative would not result in development on the project site and would not result in construction emissions of a magnitude that would obstruct the air quality planning goals set forth by SJVAPCD. Therefore, impacts associated with the Zoning Build-Out Alternative would not be cumulatively considerable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. In particular, during site preparation for agricultural production, it is possible that onsite workers could be exposed to *Coccidioides immitis*, the fungal spore that has potential to cause Valley Fever, as fugitive dust is generated during construction. However, dust-minimizing techniques, as implemented through Mitigation Measure MM 4.3-3, would reduce these impacts to less than significant. As with the proposed project, the Zoning Build-Out Alternative would result in less-than-significant impacts related to toxic air contaminants, localized pollutant concentrations, and asbestos.

Overall, impacts to air quality under the Zoning Build-Out Alternative would be less than significant with regard to cumulative construction impacts and result in greater overall impacts to air quality than the proposed project due to the greater operational emissions associated with the agricultural uses.

Biological Resources

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

Under the Zoning Build-Out Alternative, conversion of the undeveloped site to agricultural uses would affect biological resources on the project site through replacement of all native vegetation with agricultural crops or grazing areas. Agricultural uses would also result in increased human presence as opposed to the unmanned solar facility that is only visited occasionally for maintenance and panel washing.

Further, due to the extent of ground disturbance required for agricultural production, it is likely that impacts to biological resources would be similar to the proposed project. In particular, as it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, as with the proposed project, the Zoning Build-Out Alternative would have an impact to California Jewelflower, San Joaquin Bluecurls, and San Joaquin Woollythreads, as well as BNLL, Prairie falcon, Swainson's Hawk, Western burrowing owl, California horned lark, loggerhead shrike, American badger, Giant kangaroo rat, Nelson's antelope squirrel, and San Joaquin kit fox. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-12, impacts would be reduced to less than significant.

With regard to impacts on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS, agricultural activities would not require construction that could result in significant impacts related to potential jurisdictional features to ephemeral drainages within the project site and impacts would be less than the proposed project. Further, the Zoning Build-Out Alternative, as with the proposed project, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

Based on the above, project-level impacts under the Zoning Build-Out Alternative would be less than significant with implementation of mitigation and similar to those of the proposed project. However, cumulatively, this alternative would still result in significant and unavoidable impacts to biological resources; regardless of the type of development, biological resources are being impacted throughout the San Joaquin Valley. Therefore, the Zoning Build-Out Alternative would result in similar impacts related to biological resources when compared to the proposed project.

Cultural Resources

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

To convert portions of the project site to agricultural uses, this alternative would involve greater ground disturbance as opposed to the proposed project that would have some no build areas. Ground-disturbing activities associated with the project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the proposed project, the Zoning Build-Out Alternative would implement Mitigation Measures MM 4.5-1 through MM 4.5-4. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, implementation of Mitigation Measure MM 4.5-5 would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, although both the project and this alternative would result in less-than-significant impacts with mitigation as it relates to historical resources, archaeological resources, and human remains, the Zoning Build-Out Alternative would result in greater cultural resource impacts compared to the proposed project as greater ground disturbance required under this alternative could affect undocumented subsurface cultural resources.

Energy

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

The portions of the project site that would be developed with agricultural uses would require less-intensive construction activities related to the consumption transportation-related energy (petroleum-based fuels). However, greater operational electricity usage associated with the greater consumption of water associated with the proposed agricultural uses would occur.

Similar to the proposed project, the Zoning Build-Out Alternative would implement Mitigation Measure MM 4.3-1, which would require the use of energy-efficient and alternatively fueled equipment and ensure compliance with Title 13, California Code of Regulations, Section 2449 et seq., which imposes construction equipment idling restrictions. As such, the wasteful, inefficient, or unnecessary consumption of energy

resources would be similar to the proposed project. In addition, similar to the proposed project, the Zoning Build-Out Alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Based on the above, impacts under the Zoning Build-Out Alternative related to energy would be less than significant, but greater than those of the proposed project as the project site would not generate renewable energy, and would therefore, not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the proposed project.

Geology and Soils

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

Compared to the project, the Zoning Build-Out Alternative would not expose people to seismic hazards because this alternative would not establish housing or other development on the project site.

Similar to the proposed project, the Zoning Build-Out Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault. With regard to seismic ground shaking, potential impacts would be less than the proposed project, as no development would occur on the project site. As it relates to unique paleontological resource or site or unique geologic feature, similar to the proposed project, under the Zoning Build-Out Alternative any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As such, the Zoning Build-Out Alternative would implement Mitigation Measure MM 4.72 through MM 4.7-4 to reduce impacts to paleontological resources.

As discussed above, with implementation of mitigation similar to that required for the proposed project, impacts to geology and soils would likely be less than significant. However, impacts to geology and soils would be slightly greater under this alternative compared to the proposed project as the Zoning Build-Out Alternative would result in greater initial soil disturbance during construction.

Greenhouse Gas Emissions

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

As portions of the Zoning Build-Out Alternative would develop land uses that would emit GHG emissions throughout the life of the project (from increased water usage, traffic, operation of agricultural equipment, and livestock emissions), this would result in a net gain of GHG emissions within California. Unlike the proposed project, the Zoning Build-Out Alternative would not assist purchaser of renewable energy in reducing its GHG emissions as consistent with the California Global Warming Solutions Act. Impacts from the Zoning Build-Out Alternative would be greater when compared to the proposed project since the beneficial reduction in GHG emissions would not occur as with the proposed project.

Hazards and Hazardous Materials

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

There are no known hazardous materials in the soil that would be disturbed during construction of either the agricultural uses. Agricultural uses on the project site could require the use of hazardous materials during operation including herbicides and pesticides. Similar to the proposed project, the Zoning Build-Out Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2 and MM 4.17-1 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation, including the use of pesticides and herbicides; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the project, the Zoning Build-Out Alternative would implement Mitigation Measure MM 4.14-1, which includes the development and implementation of a Fire Safety Plan for construction and operation of the project in the event of a fire on the project site.

Impacts under the Zoning Build-Out Alternative and the project would result in less-than-significant impacts after implementation of mitigation measures and the potential impacts from hazards and hazardous materials would be similar to those of the proposed project.

Hydrology and Water Quality

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. Similar to the proposed project, the agricultural development would not substantially increase impervious surfaces. Conversion of the project site to agricultural uses and installation of the proposed solar panels would likely result in similar ground disturbance and erosion potential. However, operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as grazing and plowing, whereas the proposed project's operation would not; thereby, posing a greater threat to water quality. Operation of agricultural uses could also affect groundwater quality through the application of pesticides or herbicides.

The agricultural uses proposed by the Zoning Build-Out Alternative would likely require a greater amount of operational water than the proposed project for irrigation of approximately 640 acres of crops or livestock operations. With regard to operation, the agricultural and residential uses would substantially increase water demand compared to the proposed project.

Similar to the proposed project, the Zoning Build-Out Alternative would include completion of a NPDES completion form as well as implementation of Mitigation Measure MM 4.10-1 in order to reduce potential impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the Zoning Build-Out Alternative. As it relates to groundwater supplies, during initial implementation and ongoing processes water use would be greater under this alternative as compared to the project, as agricultural uses are more water intensive uses than the construction and operation of solar panels. As such, impacts would be less than significant.

With regard to existing drainage patterns, site preparation and installation of irrigation systems the Zoning Build-Out Alternative would alter existing onsite drainage patterns and flowpaths to some degree. However, as no development or impervious surfaces would be constructed, this alternative would not have the potential to considerably alter the way that stormwater from upgradient flows across the project site during

major events. Similar to the proposed project, the Zoning Build-Out Alternative would: (1) ensure that stormwater management features are consistent with existing regulatory requirements and can minimize any erosion or sedimentation to less-than-significant levels; (2) ensure that flooding on site or off site is reduced to less-than-significant levels; and (3) minimize potential increases in stormwater flow and other project-induced changes to drainage patterns to less-than-significant levels.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant. In addition, water for construction and operation phases under the Zoning Build-Out Alternative would be obtained from a nearby well or trucked onto the site from a local purveyor and would be subject to the requirements of the adjudicated basin management. Therefore, the project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, although both the project and this alternative would result in less-than-significant impacts with the implementation of mitigation, the Zoning Build-Out Alternative would result in greater impacts to hydrology and water quality compared with the proposed project, as operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as grazing and plowing, and agricultural activities would require greater operational water use.

Land Use and Planning

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. Unlike the proposed project, the Zoning Build-Out Alternative would not conflict with the existing land use at the project site, because the site would be developed with the current Specific Plan land uses and zoning designations. This alternative would be consistent with current zoning as well as existing land use plans, policies, and regulations and no CUP, or Williamson Act Contract cancellation would be required. Therefore, there would be no impact and the Zoning Build-Out Alternative would result in less impact related to land use and planning compared to the proposed project.

Mineral Resources

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. The establishment of agricultural uses on site would have a similar potential as the project to impact the future extraction of mineral resources on adjacent lands. There are no identified mineral resources on the project site and the project would result in less-than-significant impacts to mineral resources; therefore, the Specific Plan/Zoning Build-Out Alternative would result in similar impacts to mineral resources compared to the project.

Noise

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. During construction, impacts under this alternative would be similar to the impacts of the proposed project, as the conversion of the project site to agricultural uses would require similar heavy equipment as required for the construction of the proposed project. During operation, with regard to the proposed agricultural uses, this alternative

would generate greater noise than the proposed project associated with the daily operation of agricultural equipment and worker vehicles.

Under this alternative, similar to the proposed project, construction activities have the potential to result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards. However, implementation of Mitigation Measures MM 4.13-2 and MM 4.13-3 are designed to reduce impacts to the extent feasible during construction activities and, thus, impacts would be less than significant. During operation, there would be an increase in daily traffic to the project site due to agricultural uses. Additionally, continuous human presence on the project site would also be a source of permanent onsite noise. However, the operation of solar trackers, new electrical collection lines, inverters, medium voltage transformers, substation, and ESS facilitated by the proposed project would not generate permanent noise levels in excess of noise standards or create a substantial increase in ambient noise levels within the project site. In addition, operational maintenance activities would generate minimal noise.

The nearest offsite structure to the project site is a rural residence located approximately 0.67-mile northeast. There are no other sensitive noise receptors, such as schools, hospitals, rest homes, long-term care and mental care facilities, churches, libraries, and parks, found within the boundaries of the project site. At a distance of 100 feet, vibration velocities would range from approximately 0.00 to 0.08 in/sec PPV and would be unnoticeable at a distance of 0.67-mile, at the nearest sensitive receptor. Therefore, as each of these values are below the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings and the 0.4 in/sec PPV human annoyance criteria, no sources of groundborne vibration would be expected to affect receptors outside of the work areas, and there would not be any potential for excessive exposure of persons to or generation of groundborne vibration levels during project construction. Operation of the Zoning Build-Out Alternative would involve mostly regular maintenance trucks accessing the project site and agricultural equipment use that would be a sufficient distance from structures (i.e., over 100 feet away from structures). As such, vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

Both the project and this alternative would result in less-than-significant construction impacts with mitigation. However, the Zoning Build-Out Alternative would result in greater permanent noise impacts during operation than the proposed project due to the development of agricultural and residential uses, which involve the use of agricultural equipment and residential traffic.

Public Services

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. The proposed agricultural uses would increase the need for public services, including fire and police protection, in an area that is not currently serviced.

Similar to the proposed project, construction of the Zoning Build-Out Alternative would result in a similar number of construction workers on the project site and increased fire service demands would occur during construction. However, similar to the project, the Zoning Build-Out Alternative would implement Mitigation Measure MM 4.14-1, which would require the implementation of a Fire Safety Plan. During operation, the portion of the project site that would be developed with agricultural uses would not result in a change in population, as agricultural employees would likely come from the surrounding area. Similar to the project, the Zoning Build-Out Alternative would implement Mitigation Measures MM 4.14-2 through MM 4.14-5, which would require the project operator to pay Kern County development impact fees to

compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative, require payment assessed taxes if the project is sold to a city, county, or utility company, and encourage the project operator to hire at least 50 percent of their workers from local Kern County communities. Implementation of Mitigation Measure MM 4.14-1 would also reduce fire risks on site during operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, while the project site is located in an area that is unlikely to attract attention, construction activities related to installation of new structures would increase traffic volumes along SR CA-33 and I-5, similar to the proposed project. The increase in traffic related to development of agricultural uses during construction would be temporary and, thus, would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. During operation of this alternative, agricultural uses would increase operational traffic due to the increase employees travelling to the project site. However, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

With regard to schools, parks, and other government facilities, similar to the proposed project, under the Zoning Build-Out Alternative, construction workers would likely come from an existing local and/or regional construction labor force and would not likely relocate their households as a consequence of working on the project. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. During operations under the Zoning Build-Out Alternative, agricultural staff would likely come from an existing local and/or regional labor force and would not likely relocate their households as a consequence of working on the project. Therefore, the increase of onsite staff at the project site would not result in a notable increase in the residential population of the area surrounding the project site under the Zoning Build-Out Alternative.

Both the Zoning Build-Out Alternative and the project would result in less-than-significant impacts with implementation of mitigation, as neither would result in an increase in long-term population.

Transportation and Traffic

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. With regard to the agricultural uses, construction-related traffic for the conversion of the project site to agricultural uses would be similar to the proposed project. Once operational, the Zoning Build Out Alternative would involve more routine vehicle trips associated with agricultural uses, but operational vehicle trips associated with agricultural uses would be limited to the employees that would work on the site. Vehicle delay (evaluated in terms of LOS) is no longer considered to be an environmental impact under CEQA. An evaluation of potential project effects on LOS is included in this EIR for informational purposes only. While the General Plan/Specific Plan and Zoning Build-Out Alternative would increase the number employees travelling to the project site, the number of added vehicles to the roadway network would not have a discernable effect on roadway operations or levels of service. Impacts would be less than significant. Operational impacts would remain less than significant, but greater than the proposed project.

Similar to the proposed project, during construction of the Zoning Build-Out Alternative, all study roadway segments are forecasted to operate at Caltrans- or County-defined acceptable LOS A conditions or better.

As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with *CEQA Guidelines* Section 15064.3(b) as regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a transportation impact. Therefore, impacts related to *CEQA Guidelines* Section 15064.3(b) would be less than significant under the Zoning Build-Out Alternative, as with the proposed project.

Therefore, although both this alternative and the project would result in less-than-significant impacts, impacts to transportation and traffic from the Specific Plan Build-Out Alternative would be greater when compared to those of the project as operational agricultural uses would increase the amount of trips to the project site as compared to the project.

Tribal Cultural Resources

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site. Based on the records search results, field survey, and NAHC Sacred Lands File, appears to have a low sensitivity for prehistoric/Native American cultural resources. Notwithstanding, grading associated with agricultural activities could impact previously unknown and buried deposits that have the potential to qualify as cultural resources. Similar to the project, the Zoning Build-Out Alternative would implement Mitigation Measures MM 4.14-2 through MM 4.14-5. However, the Zoning Build-Out Alternative is expected to result in greater tribal cultural resource impacts as greater ground disturbance (i.e. more acreage subjected to grading/tilling as compared to the project) would be required under this alternative which could affect undocumented subsurface tribal cultural resources.

Utilities and Service Systems

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

As with the proposed project, conversion of the project site to agricultural uses would require water usage for dust suppression as well as usage of electrical power and telecommunications. The proposed project would not use natural gas, however conversion of the project site to agricultural uses would require natural gas. In addition, construction of the Zoning Build-Out Alternative would not substantially alter stormwater drainage. With regard to operation, the agricultural uses would substantially increase water demand compared to the proposed project. Wastewater and solid waste generation associated with this alternative would be greater than the proposed project due to the increase in the number of employees associated with the agricultural uses.

Although both the project and this alternative would result in less-than-significant impacts, the Zoning Build-Out Alternative would result in greater impacts to utilities and service systems compared to the proposed project as this alternative would have an increased demand on the water supply and local landfills compared to the proposed project due to the proposed agricultural uses.

Wildfires

Under the Zoning Build-Out Alternative, the project site would be developed for agricultural uses. Solar panels would not be installed and solar energy would not be generated on the site.

The proposed agricultural uses may introduce additional sources of vegetation, which may serve as fuel and exacerbate wildfire risks. Additionally, the use of the project site for agriculture would result in an increase of employees on the project site, which would further increase potential impacts from wildfire risks. Similar to the proposed project, the Zoning Build-Out Alternative would implement Mitigation Measure MM 4.14-1, which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning of the project, which would further reduce the fire risks on site. With regard to the installation or maintenance of associated infrastructure, agricultural uses would not require any installation of associated infrastructure. Similar to the proposed project, the Zoning Build-Out Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Based on the above, with implementation of similar mitigation as proposed for the project, impacts would remain less than significant under this alternative as it relates to wildfire impacts. However, the Zoning Build-Out Alternative would have greater impacts from risks associated with wildfires than the proposed project due to the agricultural uses proposed under this alternative.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the Zoning Build-Out Alternative and related projects have the potential to result in a cumulative impact related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

Comparison of Impacts

The Zoning Build-Out Alternative would result in less impacts to aesthetics, agricultural and forestry resources, biological resources, and land use and planning. The alternative would result in similar impacts to hazards and hazardous materials and tribal cultural resources. This alternative would result in greater impacts in all remaining environmental issue areas. Greater impacts to air quality would result from emissions from the proposed agricultural uses on site, such as agricultural vehicles and livestock emissions. Given the ground disturbance required, greater impacts would occur to potentially undiscovered cultural resources. This alternative would result in greater energy impacts as the project site would not generate renewable energy as compared to the proposed project, and would therefore, not assist the state in meeting its renewable energy generation goals. Greater impacts to geology and soils would result from greater initial soil disturbance during construction and greater potential to expose people to seismic hazards resulting from permanent human presence on site from the proposed agricultural uses. This alternative would result in greater GHG emission impacts than the project because the potential offset or displacement of GHG emissions from operation of the solar power generating facility, compared with traditional gas- or coal-fired power plants, would not be realized. Greater impacts to hydrology and water quality would result from continued ground disturbance from activities such as grazing and plowing and the application of pesticides or herbicides from the proposed agricultural uses. Greater impacts to noise would occur under this alternative during operation, through the noise associated with the daily operation of agricultural equipment and worker vehicles, as well as residential traffic. The increase in human population on site is also responsible for greater impacts to public services, transportation and traffic, utilities and service systems, and wildfires. This alternative would not eliminate significant and unavoidable impacts associated with air quality (cumulative only), and biological resources (cumulative only).

Relationship to Project Objectives

The Zoning Build-Out Alternative would not achieve any of the project objectives listed above in Section 6.2, including the project's objective related to developing solar facilities to produce clean electricity to help achieve California's renewable energy goals.

6.7.3 Alternative 3: Reduced Acreage Alternative

Environmental Impact Analysis

Aesthetics

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project).

With regard to impacts related to scenic vistas, there are no local areas that are designated as scenic vistas within the vicinity of the project. Existing land use in the vicinity of the project site generally includes undeveloped lands, agricultural lands, access roadways, a canal and a nut processing plant. There are no local areas that are designated as scenic vistas within the vicinity of the project site. The nearest eligible scenic highway, SR-41, to the project site is located approximately 12 miles northwest of the project site. The Kern National Wildlife Refuge is located approximately 13 miles to the east of the project site. The project site is unlikely to be visible from neither SR-41 nor the wildlife refuge given the distance, topography and orchards between them. Impacts would be less than significant.

With regard to scenic resources, as discussed in Section 4-1 of this EIR, the project would not be visible from any Officially Designated State or County Scenic Highway and impacts would remain less than significant under the Reduced Acreage Alternative.

While this alternative would avoid development of a portion of the project section, this alternative would also include the installation of solar panels and other facilities. Similar to the proposed project, the Reduced Acreage Alternative would similarly implement Mitigation Measures MM 4.1-1 through MM 4.14, which would reduce impacts to visual character and quality to the maximum extent feasible by requiring the preparation of a Maintenance, Trash Abatement, and Pest Management Program, requiring color-treating buildings and walls- to blend in with the colors found in the natural landscape to reduce color disharmony, and requiring preparation of a revegetation plan during construction and decommissioning. Nevertheless, similar to the proposed project, impacts would be significant and unavoidable. In addition, in combination with other projects, particularly the wind turbines and other solar development that exist near the project site, the Reduced Acreage Alternative would contribute to added cultural modifications in the project area. While Mitigation Measures MM 4.11 through MM- 4.14 would be implemented to reduce aesthetics impacts, and other projects in the region would be required to implement similar mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar energy production uses cannot be mitigated to a degree that impacts are no longer significant. As such, -similar to the project, cumulative impacts from the change to the visual character of the site would remain significant and unavoidable for the Reduced Acreage Alternative.

With regard to project impacts due to new sources of light or glare, this alternative would result in relatively less impact than the proposed project due to the reduced project footprint. Furthermore, per Mitigation

Measure MM 4.1-5, any nighttime construction would use lighting designed to provide the minimum illumination needed, thereby minimizing adverse impacts on any nearby residents. Mitigation Measure MM 4.1-5 would also require the project to comply with the Dark Skies Ordinance for all lighting to be directed downward and shielded. Regarding glare, this alternative would also have to implement Mitigation Measures MM 4.1-6 and MM 4.1-7, which require the use of non-reflective and non-glare materials when feasible. Impacts related to light and glare on the Reduced Acreage Alternative site would still be less than significant. However, due to the reduction in project site size, the Reduced Acreage Alternative would have less impact to aesthetics than the proposed project.

Agriculture and Forestry Resources

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). The proposed project and the Reduced Acreage Alternative would be developed with a solar panel facility and associated infrastructure and, thus, would create changes in the existing environment and would convert land zoned for agriculture to non-agricultural use. Similar to the project, the Reduced Acreage Alternative would have the potential to impact farmland. While the project site does not contain active agricultural uses and is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, it includes one parcel that is subject to active Williamson Act Land Use Contracts. As the project site is currently subject to a Williamson Act Contract, development of the Reduced Acreage Alternative prior to expiration would conflict with the contract.

Impacts to agriculture and forestry resources would still be significant and unavoidable. As the Reduced Acreage Alternative would include a slightly smaller footprint, impacts related to agriculture and forestry resources would be less than those of the proposed project.

Air Quality

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project), thereby reducing the overall extent of construction-related impacts to air quality. The use of construction vehicles, heavy equipment operation, and worker carpool trips would be less compared to the proposed project. Similar to the proposed project, this alternative would require implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 in order to reduce the severity of construction-related emissions. Similar to the proposed project, impacts would remain significant and unavoidable for cumulative temporary construction impacts as the daily emissions under this alternative, as the construction schedule for cumulative projects could still overlap with the Reduced Acreage Alternative. Operational emissions would likely be reduced under this alternative as fewer maintenance trips would be required with the reduced project scale. As such, similar to the proposed project, operational impacts would be less than significant.

As it relates to impacts on implementation of the applicable air quality plan, since temporary cumulative construction impacts would be significant and unavoidable, the Reduced Acreage Alternative would result in temporary construction emissions of a magnitude that would obstruct the air quality planning goals set forth by SJVAPCD. Therefore, similar to the proposed project, impacts would be significant and unavoidable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. In particular, during construction of this alternative, it is possible that onsite workers could be exposed to

Coccidioides immitis, the fungal spore that has potential to cause Valley Fever as fugitive dust is generated during construction. However, dust-minimizing techniques, as implemented through Mitigation Measure MM 4.3-3, would reduce these impacts to less than significant. As with the proposed project, the Reduced Acreage Alternative would result in less-than-significant impacts related to toxic air contaminants, localized pollutant concentrations, and asbestos.

Overall, even with implementation of similar mitigation proposed for the project, impacts to air quality under this alternative would likely remain significant and unavoidable, despite resulting in a reduction in emissions due to reduced grading footprint under this alternative. The Reduced Acreage Alternative would result in less overall impacts related to air quality than the proposed project.

Biological Resources

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS), as with the proposed project, the Reduced Acreage Alternative would have an impact to transient wildlife species, including BNLL, Prairie falcon, Swainson's Hawk, Western burrowing owl, California horned lark, loggerhead shrike, American badger, Giant kangaroo rat, Nelson's antelope squirrel, and San Joaquin kit fox. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species, most of which are expected to utilize the project site on at least a transient basis. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-12, impacts would be reduced to less than significant. However, as this alternative would avoid disturbing 192 acres of land within the project site, the Reduced Acreage Alternative would directly reduce the project's impact to biological resources.

Based on the above, project-level impacts under the Reduced Acreage Alternative would be less than significant with implementation of mitigation and less to those of the proposed project. However, cumulatively, this alternative would still result in significant and unavoidable impacts to biological resources; regardless of the type of development, biological resources are being impacted throughout the San Joaquin Valley. However, as this alternative would avoid disturbing 192 acres of land within the project site, the Reduced Acreage Alternative would result in less impacts related species identified as candidate, sensitive, or special-status species, as well as impacts related to riparian habitat or other sensitive natural community when compared to the proposed project. All other impacts related to biological resources would remain the same as the proposed project.

Cultural Resources

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project).

Ground-disturbing activities associated with the project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.5-1 through MM 4.5-4. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, implementation of Mitigation Measure MM 4.5-5 would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, implementing mitigation similar to the mitigation proposed for the project, impacts to cultural resources under this alternative would be less than significant. However, the Reduced Acreage Alternative would result in less impacts related to cultural resources compared to the proposed project due to the reduction in ground disturbance required under this alternative.

Energy

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Eliminating 192 acres from project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 42 MW, due to the proportional reduction in project size. Therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced as compared with the proposed project. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.3-1, which would require the use of energy-efficient and alternatively fueled equipment and ensure compliance with Title 13, California Code of Regulations, Section 2449 et seq., which imposes construction equipment idling restrictions. As such, the wasteful, inefficient, or unnecessary consumption of energy resources would be reduced in comparison with the proposed project. Similar to the proposed project, this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant. The Reduced Acreage Alternative would result in fewer energy impacts compared to the proposed project.

Geology and Soils

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project), and thus there would be less potential for erosion and exposure to geologic hazards.

Similar to the proposed project, the Reduced Acreage Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, seismic-related ground failure including liquefaction, unstable or expansive soils. Adherence to all applicable regulations, as well as implementation of Mitigation Measures MM 4.7-1 would ensure that effects from rupture of a known earthquake fault, seismic-related ground failure including liquefaction, unstable or expansive soils, would be minimized.

Similar to the proposed project, the Reduced Acreage Alternative would not require connection to any septic systems or sewer infrastructure. Temporary, portable restroom facilities would be provided during construction, decommissioning and operations. As it relates to unique paleontological resource or site or unique geologic feature, similar to the proposed project, under the Reduced Acreage Alternative any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As such, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.72 through MM 4.74 to reduce impacts to paleontological resources. Therefore, impacts would be less than significant.

As discussed above, with implementation of mitigation similar to that required for the proposed project, impacts to geology and soils would likely be less than significant. However, impacts to geology and soils would result in less impact to geology and soils compared to the proposed project due to the reduction in ground disturbance required under this alternative.

Greenhouse Gas Emissions

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Given a smaller project footprint than the proposed project, the construction and operational impacts from the Reduced Alternative would remain less than the proposed project. Therefore, the Reduced Acreage Alternative would result in fewer GHG emissions during construction and operations when compared with the proposed project. Eliminating 192 acres from project development would result in reduced energy generation by a factor of 30 percent, as the Reduced Acreage Alternative would generate approximately 42 MW due to the proportional reduction in project size. While project-related GHG impacts would remain less than significant, the 30 percent reduction in the production of renewable energy from this alternative would result in greater GHG impacts in comparison to the project due to the corresponding loss in GHG offsets.

Hazards and Hazardous Materials

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.91, MM 4.92, and MM 4.171 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation, including the use of pesticides and herbicides; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. With regard to hazardous emissions within 0.25 miles of a school, the nearest school to the project site is located approximately 14 miles south of the site, and therefore, the project would result in no impact related to hazardous emissions within 0.25 miles of a school.

As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the project, the Reduced Acreage Alternative would include an ESS component which, while they generally burn with difficulty, can in fact burn or become damaged by fire and generate fumes and gases that are extremely corrosive. Mitigation Measure MM 4.141 would be implemented which includes the development and implementation of a Fire Safety Plan for construction and operation of the project in the event of a fire on the project site.

Impacts under the Reduced Acreage Alternative and the proposed project would result in less-than-significant impacts after implementation of mitigation measures and the potential impacts from hazards and hazardous materials under the Reduced Acreage Alternative would be similar to those of the proposed project.

Hydrology and Water Quality

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). The reduced footprint would result in slightly reduced grading activities and would reduce the amount of impervious surfaces compared to the proposed project.

Similar to the proposed project, the Reduced Acreage Alternative would include completion of a NPDES completion form as well as implementation of Mitigation Measure MM 4.9-1 in order to reduce potential

impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the Reduced Acreage Alternative. As it relates to groundwater supplies, water requirements under the Reduced Acreage Alternative, similar to the proposed project, would be relatively small and would represent a small portion of the established safe yield of the basin, and would not substantially deplete groundwater levels in comparison to existing conditions. As such, impacts would be less than significant.

With regard to existing drainage patterns, installation of the facilities required under the Reduced Acreage Alternative would alter existing onsite drainage patterns and flowpaths to some degree, and could alter the way that stormwater from upgradient flows across the project site during major events. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.10-2, which requires the project to: (1) ensure that the retention basins and other stormwater management features are consistent with existing regulatory requirements and can minimize any erosion or sedimentation to less-than-significant levels; (2) ensure that flooding on site or off site is reduced to less-than-significant levels; and (3) minimize potential increases in stormwater flow and other project-induced changes to drainage patterns to less-than-significant levels.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant. In addition, water for construction and operation phases under the Reduced Acreage Alternative would be obtained from a nearby well or trucked onto the site from a local purveyor and would be subject to the requirements of the adjudicated basin management. Therefore, the project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be less than significant. However, the Reduced Acreage Alternative would have less impact related to hydrology and water quality compared to the proposed project due to the reduced footprint, which would result in reduced grading activities and would reduce the amount of impervious surfaces compared to the proposed project.

Land Use and Planning

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Nevertheless, development of the Reduced Acreage Alternative alone would still require two CUPs (one for the solar facility and one for the communication tower), and cancellation of a Williamson Act Contract within the CUP boundary. Impacts would be less than significant under this alternative. Land use and planning impacts would be similar under the Reduced Acreage Alternative when compared to the proposed project.

Mineral Resources

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). There are no identified mineral resources on the project site and this alternative would result in less-than-significant impacts to mineral resources; therefore, the Reduced Acreage Alternative would result in similar impacts to mineral resources compared to the proposed project.

Noise

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with the proposed project.

Under this alternative, similar to the proposed project, construction activities have the potential to result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards. However, Mitigation Measures MM 4.13-1 through MM 4.13-3 are designed to reduce impacts to the extent feasible during construction activities and, thus, impacts would be less than significant. The operation of solar trackers, new electrical collection lines, inverters, medium voltage transformers, substation, and ESS would not generate permanent noise levels in excess of noise standards or create a substantial increase in ambient noise levels within the project site. In addition, operational maintenance activities would generate minimal noise. Thus, operational impacts would be less than significant. In addition, the nearest offsite structure to the proposed project construction area is a rural residence located approximately 0.67-mile northeast of the project site. At a distance of 100 feet, vibration velocities would range from approximately 0.00 to 0.08 in/sec PPV and would be unnoticeable at a distance of 0.67-mile, at the nearest sensitive receptor. Therefore, these values are below the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings and the 0.4 in/sec PPV human annoyance criteria, no sources of groundborne vibration would be expected to affect receptors outside of the work areas, and there would not be any potential for excessive exposure of persons to or generation of groundborne vibration levels. As such, the vibration levels at the rural residence would not reach the vibration level threshold for older residential structures. Operation of the Reduced Acreage Alternative would involve mostly regular maintenance trucks accessing the project site and panel washing activities, similar to the proposed project, that would be a sufficient distance from structures (i.e., over 100 feet away from structures). As such, vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

This alternative is expected to result in less-than-significant noise impacts during construction and decommissioning activities and impacts related to noise would be similar to those of the proposed project. This alternative is expected to result in less than significant with mitigation noise impacts during operational activities and impacts related to noise would be less than those of the proposed project given the reduced footprint and similar time period of temporary noise impacts.

Public Services

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with the proposed project.

Similar to the proposed project, construction of the Reduced Acreage Alternative would result in a number of construction workers on the project site and increased fire service demands would occur during construction of this alternative. However, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.141, which would require the implementation of a Fire Safety Plan. During operation, the reduced acreage alternative project site would require up to 5 full-time equivalent (FTE) personnel. Implementation of Mitigation Measure MM 4.141 would also reduce fire risks on site during operation of this alternative. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.142 through MM 4.14-5, which would require the project operator to pay Kern County

development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative, require payment assessed taxes if the project is sold to a city, county, or utility company, and encourage the project operator to hire at least 50 percent of their workers from local Kern County communities. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, while the project site is located in an area that is unlikely to attract attention, construction activities would increase traffic volumes along CA-33 and I-5, similar to the proposed project. The increase in traffic would be temporary and, thus, would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. In addition, chain-link security fencing would be installed around the site perimeter and other areas requiring controlled access during construction. During operation of this alternative, the additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic. Therefore, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

With regard to schools, parks, and other government facilities, similar to the proposed project, under the Reduced Acreage Alternative, construction workers would likely come from an existing local and/or regional construction labor force and would not likely relocate their households as a consequence of working on the project. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. During operations under the Reduced Acreage Alternative, fewer staff would be required to operate the O&M facility than under the proposed project. However, similar to the proposed project, this staff would likely come from an existing local and/or regional labor force and would not likely relocate their households as a consequence of working on the project. Therefore, the increase of onsite staff at the project site would not result in a notable increase in the residential population of the area surrounding the project site under the Reduced Acreage Alternative. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities, and, similar to the proposed project, there would be no impact.

Based on the above, impacts would be less than significant under this alternative following implementation of similar mitigation measures proposed for the project and impacts related to public services would be similar to those of the proposed project.

Transportation and Traffic

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with the proposed project.

Similar to the proposed project, VMT calculations for the Reduced Acreage Alternative would be based on a screening criterion to determine if VMT analysis is warranted for small projects, which are defined as projects that would generate fewer than 110 trips per day and may generally be assumed to cause a less-than-significant transportation impacts. Under the Reduced Acreage Alternative, the project would be expected to have a similar daily trip generation of approximately 13 trips per day for the full facility based on an average trip rate of 2.5 trips per employee. Therefore, the project would generate substantially fewer than the 110-trip-per-day threshold and can be assumed to cause a less-than-significant transportation impact.

Vehicle delay (evaluated in terms of LOS) is no longer considered to be an environmental impact under CEQA. An evaluation of potential project effects on LOS is included in this EIR for informational purposes only. The Reduced Acreage Alternative would have the same number employees travelling to the project site, and similar to the proposed project, the added vehicles to the roadway network would not have a discernable effect on roadway operations or levels of service. Impacts would be less than significant.

Similar to the proposed project, during construction of the Reduced Acreage Alternative, which would require similar construction trips for installation of the solar panels, all study roadway segments are forecasted to operate at Caltrans- or County-defined acceptable LOS A conditions or better. During operation of this alternative, day to day operations and maintenance trips would be reduced in comparison with those of the proposed project. Similar to the proposed project, the total number of daily trips for maintenance of the solar panels are estimated to be less than the number of trips generated during construction. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

Based on the above, impacts would be less than significant. Given the similarity between this alternative's and the proposed project's construction and operational vehicle and truck trips, the Reduced Acreage Alternative would result in similar impacts related to transportation and traffic as the proposed project.

Tribal Cultural Resources

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Record searches returned negative results and failed to reveal the presence of known Native American resources within the project area. Further, no potential tribal resources were identified through tribal consultation. Therefore, due to the absence of ground disturbance activities and the lack of identified tribal cultural resources in the project area, similar to the proposed project, the Reduced Acreage Alternative, would not cause a substantial adverse change in the significance of a tribal cultural resources.

Utilities and Service Systems

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project). Eliminating 192 acres from project development would result in reduced demand for utilities and service systems, as the Reduced Acreage Alternative would generate approximately 42 MW due to the proportional reduction in project size, and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the proposed project.

As with the proposed project, project construction and operations under the Reduced Acreage Alternative would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, and telecommunications. In addition, construction of the Reduced Acreage Alternative would not substantially alter stormwater drainage. With regard to operation, the solar panels installed under the Reduced Acreage Alternative would require a reduced water demand in comparison with the proposed project. Wastewater and solid waste generation associated with this alternative would also be reduced compared to the proposed project due to the reduced number of employees required for maintenance of the solar panels. As the Reduced Acreage Alternative would develop the project site, impervious surfaces would be minimized as much as possible, as with the proposed project. Similar to the proposed project, the

Reduced Acreage Alternative would implement Mitigation Measure MM 4.10-1, would include measures to offset increases in stormwater runoff caused by the project and would further reduce impacts.

This alternative is expected to result in less-than-significant impacts to utilities and service systems and impacts would be similar to those of the proposed project.

Wildfires

Under the Reduced Acreage Alternative, the project acreage would be reduced by 30% to 448 acres (from the 640-acres proposed under the project).

Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-1, which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning of the project, which would further reduce the fire risks on site. With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the proposed project. The installation of the electrical collector line would not be placed within a high fire hazard zone and the vegetation would be cleared to the extent necessary, and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment. Similar to the proposed project, the Reduced Acreage Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation proposed for the project, this alternative is expected to result in less-than-significant impacts to wildfires. The Reduced Acreage Alternative would likely result in slightly less impact than the proposed project due to the reduced footprint compared with the proposed project.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the Reduced Acreage Alternative and past, present and reasonably foreseeable future projects have the potential to result in a cumulative impact related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

Comparison of Impacts

The Reduced Acreage Alternative would be reduced in size compared to the proposed project, and would generate approximately 42 MW due to the proportional reduction in project size and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the proposed project. Due to the reduced footprint, the Reduced Acreage Alternative would result in less or similar impacts for all of the environmental issue areas. However, this alternative would not eliminate significant and unavoidable impacts associated with aesthetics (project and cumulative), agriculture and forestry resources (project and cumulative), air quality (cumulative construction only), biological resources (cumulative only), and wildfires (cumulative only).

Relationship to Project Objectives

The Reduced Acreage Alternative would meet most of the project objectives listed above in Section 6.2. Under the Reduced Acreage Alternative, the project would reduce the project's footprint from 640 acres to 448 acres. Therefore, this alternative would create fewer environmental impacts; however, it would not reduce any identified significant and unavoidable impact to less than significant.

6.7.4 Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only

Environmental Impact Analysis

Aesthetics

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kilowatt hours to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County.

With regard to impacts related to scenic vistas, there are no officially designated scenic vistas within the vicinity of the project site. Similar to the project, under the No Ground-Mounted Utility-Solar Development Alternative, development of a solar facility would not block available views of the Wind Wolves Preserve from preserve trails. With the No Ground-Mounted Utility-Solar Development Alternative, solar installation would occur on the roofs of the existing buildings. In addition, installation of solar panels on rooftops of commercial and industrial facilities dispersed throughout the valley region of Kern County and would not substantially change the viewshed of the Wind Wolves Preserve from preserve trails. Thus, given that there are no officially designated scenic vistas and development under this alternative would be dispersed throughout the valley region of Kern County, the No Ground-Mounted Utility-Solar Development Alternative would not have a substantial adverse effect on a scenic vista.

The installation of small to medium solar PV systems on large commercial and industrial rooftops would be visually unobtrusive or unnoticeable from receptors at ground level. However, from other vantage points, the installation of rooftop small to medium solar PV systems may be visible, but would not likely affect the visual character or quality of an area, because the character or quality of an area has already been altered as a result of the existing building's construction. The exceptions may be if rooftop solar were proposed on historic buildings, which could affect the historic character and integrity of the buildings. Implementation of this alternative would require historic surveys and investigations to evaluate the eligibility of potentially historic structures that are over 50 years old, and either avoidance of such buildings, or incorporation of design measures to minimize impacts on historic integrity of historically significant structures.

With regard to light and glare, construction and operation of the No Ground-Mounted Utility-Solar Development Alternative would require implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, similar to the project. Impacts related to light and glare under the No Ground-Mounted Utility-Solar Development Alternative site would be less than significant.

Based on the above, this alternative would avoid significant and unavoidable project level and cumulative impacts related to visual character and quality that would occur under the project. With implementation of mitigation measures to address impacts related to historic buildings, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to aesthetics compared to the project.

Agriculture and Forest Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Since the solar PV systems proposed for this alternative would be constructed on existing structures, this alternative would not create any changes in the existing environment that would convert land that is designated Farmland to non-agricultural use. As such, no impacts to agriculture or forestry resources would occur. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to agricultural resource compared to the proposed project.

Air Quality

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Under this alternative, no construction activities associated with ground disturbance would occur. Thus, this alternative would eliminate the significant and unavoidable cumulative construction impacts related to regional air quality emissions and implementation of applicable air quality plans. Emissions would be limited to trucks transporting the solar panels and minor ground disturbance. The No Ground-Mounted Utility-Solar Development Alternative required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. During operation, this alternative would have similar impacts on air quality as the project related to occasional vehicular visits for maintenance. As such, operational impacts would be less than significant. Overall, air quality impacts under the No Ground-Mounted Utility-Solar Development Alternative would be less than significant. Therefore, this alternative would result in less impacts related to air quality compared to the project as this alternative would result in a substantial reduction in construction activities.

Biological Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. The project site would remain undeveloped and only developed areas, typically on the rooftops of commercial and industrial facilities, in the valley region of Kern County would be modified. Given that rooftops of existing commercial and industrial facilities would be used for solar PV system installation, these areas would be unlikely to provide habitat for special-status species. Development of this alternative would not disturb any land or remove habitat for special-status plants and wildlife.. As such, Mitigation Measures MM 4.4-1 through MM 4.4-12 would not be required. Operation of the small to medium solar PV systems would continue to require implementation of Mitigation Measures MM 4.4-10 and MM 4.4-11. Therefore, this alternative would not contribute to a cumulative loss of foraging and nesting habitat for BNLL, Prairie falcon, Swainson's Hawk, Western burrowing owl, California horned lark, loggerhead shrike, American badger, Giant kangaroo rat, Nelson's antelope squirrel, and San Joaquin kit fox. As such,

significant and unavoidable cumulative impacts would be eliminated as well. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to biological resources compared to the proposed project.

Cultural Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Given that development would occur on the rooftops of existing structures, there would be no potential for disturbance or damage to buried archaeological resources and human remains. If rooftop solar systems were proposed on historic buildings, this alternative could affect the historic character and integrity of these buildings, as well as the character and views of adjacent historical resources. However, historic surveys and investigations would be conducted prior to project construction to identify known eligible historical resources and to evaluate the eligibility of potentially historic structures that are 50-years or older; historic structures would be either avoided or the alternative would be required to incorporate mitigation and design measures to minimize the impact on these structures. In the case of eligible historical resources, design measures must be in accordance with the Secretary of the Interior standards and the impact must not affect the eligibility of such resources or adjacent resources. Therefore, unanticipated impacts to unknown or known cultural resources would not occur under this alternative. Impacts would be less than significant. With the appropriate mitigation measures in place to reduce impacts to historical resources, the potential to disturb or discover unknown cultural resources within the project area would be less than significant. However, given the inability to impact archaeological resources under this alternative, the No Ground-Mounted Utility-Solar Development Alternative would result in fewer impacts related to cultural resources compared to the proposed project.

Energy

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. As such, construction would be limited to trucks transporting the solar panels and installation of the solar panels on the rooftops of existing buildings. Implementation of Mitigation Measure MM 4.3-1 would still be required during construction as it requires implementation of energy-efficient and alternatively-fueled equipment during construction. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would have a less-than-significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources and this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As similar energy generation capabilities would be provided, impacts would be similar to those of the proposed project.

Geology and Soils

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Given that only developed areas would be modified, there would be no potential for this alternative to directly or indirectly cause potential substantial adverse effects involving

rupture of a known earthquake fault or strong seismic ground shaking; result in substantial soil erosion or loss of topsoil; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. This alternative would not require implementation of Mitigation Measures MM 4.7-1 through MM 4.7-4. Development of rooftop solar would require adherence to all requirements of the Kern County Building Ordinance. Therefore, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to geology and soils compared to the proposed project.

Greenhouse Gas Emissions

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. This alternative would not generate GHG emissions from heavy equipment required for ground disturbing activities, but distributed systems on rooftops would lack tracking systems and be less efficient. As such, this alternative's overall GHG emission offset potential would be smaller to the proposed project. Therefore, this alternative would have less-than-significant impacts related to generating GHG emissions that may have a significant impact on the environment or consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. However, impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology.

Hazards and Hazardous Materials

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. The installation of rooftop solar equipment on existing structures would involve fewer hazardous materials (such as chemicals and fuels) than the proposed project construction on the undeveloped project site. Similar to the proposed project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measures MM 4.91, MM 4.92, and MM 4.171 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As it relates to wildland fires, as the small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the San Joaquin Valley, it is expected that these areas where the solar PV systems would be installed would be in more urbanized areas that would not require a ESS component. However, due to the numerous power lines on each individual rooftop that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As such, similar to the proposed project, Mitigation Measure MM 4.141 would be implemented to reduce wildfire risks under this alternative.

Based on the above, impacts under this alternative would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to hazards and hazardous

materials than the proposed project as this alternative would require usage of fewer hazardous materials.

Hydrology and Water Quality

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. No ground disturbance related to construction would be required under this alternative.

While completion of NPDES completion forms would not be required under the No Ground-Mounted Utility-Solar Development Alternative, similar to the proposed project, this alternative would require implementation of Mitigation Measure MM 4.9-1 in order to reduce potential impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the No Ground-Mounted Utility-Solar Development Alternative.

As it relates to groundwater supplies, water requirements under the No Ground-Mounted Utility-Solar Development Alternative, similar to the proposed project, would be relatively small and would represent a small portion of the established safe yield of the basin, and would not substantially deplete groundwater levels in comparison to existing conditions. This alternative would also likely require minimal water as no dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent given the location of panels on top of buildings throughout the San Joaquin Valley (rather than directly on sediment). As such, impacts would be less than significant.

With regard to existing drainage patterns, as small to medium solar PV systems would be developed on the rooftops of existing commercial and industrial facilities situated throughout the San Joaquin Valley, drainage patterns and flow paths would not be altered. As such, impacts related to drainage patterns would be less than significant.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant. In addition, water for construction and operation phases under the No Ground-Mounted Utility-Solar Development Alternative would be obtained from a nearby well or trucked to the solar panels from a local purveyor and would be subject to the requirements of the adjudicated basin management. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be less than significant. However, the No Ground-Mounted Utility-Solar Development Alternative would result in less overall impacts related to hydrology and water quality materials compared to the proposed project as this alternative would not require ground disturbance, which could potentially introduce more pollutants to stormwater, and water requirements during construction and operation of the this alternative would be reduced as no dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent.

Land Use and Planning

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing

developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Under this alternative, there would be no CUPs or cancellation of Williamson Act Contracts vacations would be required. Installation of rooftop solar would be consistent with current zoning as well as existing land use plans, policies, and regulations. The No Ground-Mounted Utility-Solar Development Alternative would also achieve the County's goals and policies relative to accommodating renewable energy facilities. However, the placement of solar panels on other structures throughout the region would result in unknown entitlement requirements, depending on the project location, zoning, land use, and potential environmental impacts on the site and surrounding areas. Nonetheless, to allow such development, the project proponent would be required to comply with the specific entitlements needed to construct solar PV systems consistent with this alternative. Impacts to land use and planning under the No Ground-Mounted Utility-Solar Development Alternative would be less than significant, but would be greater than the proposed project.

Mineral Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Since this alternative would not disturb any ground surfaces, there would be no impact to mineral resources. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts to mineral resource compared to the proposed project as no ground disturbance would occur.

Noise

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Rooftops of existing commercial and industrial buildings that would be developed under this alternative would be in developed areas. As a result, noise related to construction activities would likely impact sensitive receptors during construction. The operational noise generated from these solar PV systems would be similar to that of the proposed project and would result in less-than-significant impacts. With regard to vibration, construction of the No Ground-Mounted Utility-Solar Development Alternative would not require the use of vibratory rollers or other construction equipment with high groundborne vibration levels. Therefore, it is likely that construction vibration would have a less than significant construction vibration impact. Similar to the proposed project, operation of the No Ground-Mounted Utility-Solar Development Alternative would require regular maintenance trucks (0.076 in/sec PPV) and panel washing activities. Whether rooftop solar systems are proposed on historic buildings, which are more susceptible to vibration damage, or other types of newer buildings, this level of vibration would not exceed vibration thresholds and, as such, would result in less-than-significant impacts.

As discussed above, construction and operational vibration and noise impacts for the No Ground-Mounted Utility-Solar Development Alternative would be less than significant. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in similar impacts related to construction noise than the proposed project.

Public Services

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County and the project site would remain undeveloped. Unlike the proposed project, the No Ground-Mounted Utility-Solar Development Alternative would not introduce structures into a currently undeveloped area and is not expected to significantly increase the concentration of persons in an area, either temporarily or permanently.

With regard to fire protection, it is expected that the areas where the solar PV systems would be installed in more urbanized areas. In addition, this alternative would not require a ESS component. However, due to the numerous power lines on each individual rooftop that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As such, similar to the proposed project, Mitigation Measure MM 4.14-1 would be implemented to reduce wildfire risks under this alternative. In addition, similar to the proposed project, in the event that a fire occurs during operation of the No Ground-Mounted Utility-Solar Development Alternative, this alternative would implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, as the proposed small to medium solar PV systems would be installed in more urbanized areas on existing buildings, it is unlikely that construction and operation of the No Ground-Mounted Utility-Solar Development Alternative would attract attention. Similar to the proposed project, this alternative would increase traffic with truck trips during construction and routine maintenance during operation of this alternative. However, the additional volume of trips during construction and operation would be minimal and would not likely have a significant and adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

Based on the above, impacts are expected to be less than significant with mitigation. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to public services compared to the proposed project because the proposed small to medium solar PV systems would be developed in urbanized areas that are in closer proximity to existing fire and police protection services.

Transportation and Traffic

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County.

Similar to the proposed project, this alternative would require vehicular trips during construction to transport and install the solar panels. However, the trips would be more dispersed than the proposed project given the location of the existing facilities, thereby reducing impacts on the roadways surrounding the project site. As such, roadway segments within the San Joaquin Valley are not expected to operate at levels that would trigger a significant transportation impact during construction of this alternative. During operation of this alternative, day to day operations and maintenance trips would be similar to those of those of the propose project. However, as with construction, these maintenance trips would be more dispersed

than the proposed project given the location of the existing facilities. It is also estimated that the total number of daily trips for maintenance of the solar panels are less than the number of trips generated during construction. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with *CEQA Guidelines* Section 15064.3(b), as regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a traffic impact. Therefore, impacts related to *CEQA Guidelines* Section 15064.3(b) would be less than significant under the No Ground-Mounted Utility-Solar Development Alternative, as with the proposed project.

Based on the above, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to transportation and traffic compared to the proposed project.

Tribal Cultural Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. It is unlikely that the proposed rooftop solar systems would have an impact on tribal cultural resources. However, prior to construction of this alternative, the Native American Heritage Commission will be contacted for a search of the Sacred Land File for the No Ground-Mounted Utility-Solar Development Alternative construction area. In addition, the County will conduct additional consultation with California Native American tribes on the County's Master List for AB 52, apprising them of the alternative project description. Due to the nature of the No Ground-Mounted Utility-Solar Development Alternative, it is highly unlikely to have an impact on tribal cultural resources. It is anticipated that the Sacred Land File and consultation would not result in the identification of any tribal cultural resources that could be impacted by the No Ground-Mounted Utility-Solar Development Alternative directly or indirectly, however should it be determined the potential exists, this alternative will avoid impacting any such resources through avoidance and re-design. As such, The No Ground-Mounted Utility-Solar Development Alternative would have no impact to tribal cultural resources and no mitigation would be required. Furthermore, as no ground disturbance would occur, the No Ground-Mounted Utility-Solar Development Alternative would result in fewer potential impacts related to tribal cultural resources compared to the proposed project.

Utilities and Service Systems

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County.

With regard to water demand, this alternative would likely require minimal water as no dust suppression would be required during construction. This alternative would also require minimal generation of wastewater, usage of electrical power, and telecommunications. In addition, construction of the No Ground-Mounted Utility-Solar Development Alternative would not substantially alter stormwater drainage. With regard to operation, solar panel washing is expected to be less frequent, as compared to the proposed project, given the location of panels on top of buildings throughout the valley region of Kern County (rather than

directly on sediment). Wastewater and solid waste generation associated with this alternative would be similar to the proposed project due to the similar number of employees required for maintenance of the solar panels. As the No Ground-Mounted Utility-Solar Development Alternative would not develop the project site, this alternative would not result in impervious surfaces and implementation of Mitigation Measures MM 4.10-1 would not be required.

Based on the above, impacts to utilities and service systems would be less than significant. This alternative would result in less overall impacts related to utilities and service systems than the proposed project.

Wildfires

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems (100 kW to 1 MW) would be developed within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the valley region of Kern County. Due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks above that of the proposed project. As such, similar to the proposed project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measure MM 4.141, which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning of the project, which would further reduce the fire risks. With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the proposed project. The installation of the electrical collector line would not be placed within a high fire hazard zone and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment. Similar to the proposed project, the No Ground-Mounted Utility-Solar Development Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation, this alternative is expected to result in less-than-significant impacts to wildfires. The No Ground-Mounted Utility-Solar Development Alternative would likely result in slightly less impact than the proposed project as solar panels would be located in more urbanized areas.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the No Ground-Mounted Utility-Solar Development Alternative and related projects have the potential to result in a cumulative impact related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

Comparison of Impacts

The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation and traffic, tribal cultural resources, and utilities and service systems. Further, this alternative would avoid the significant and unavoidable impacts to aesthetics (project and cumulative), agriculture and forestry resources (project and cumulative), air quality (cumulative only), and biological resources (cumulative only) that would occur under the proposed project.

Relationship to Project Objectives

This alternative would satisfy some of the project objective of assisting California in reducing GHG emissions. However, it is unlikely the alternative would have an average insolation value similar to or greater than that of the project site given the lack of efficiency of rooftop solar compared to solar tracking technology. Additionally, there are some drawbacks to this alternative that include, but not limited to those listed below.

- The BESS is not included.
- The system would not likely be built out within a timeframe that would be similar to that of the proposed project.
- Given the distributed nature of such a network of facilities, construction, management, and maintenance would not be as efficient, and total capital costs would likely be higher.
- The project proponent does not have immediate control or access to potential urban sites that could accommodate facilities to generate 60 MW of solar power.
- A distributed system of the scale of the project would be cost-prohibitive.

This alternative theoretically has the potential to generate of up to 60 MW of electricity but it would be used on the sites generating the power, and would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Additionally, this alternative does not include a BESS component. Given the size of the proposed project, the project objectives, and the need to arrange a suitable assemblage of participating commercial and industrial properties, it is impractical and infeasible to propose a distributed generation project of this type and still proceed within a reasonably similar timeframe.

6.8 Environmentally Superior Alternative

As presented in the comparative analysis above, and as shown in **Table 6-2: Comparison of Alternatives**, there are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. Alternative 1, the No Project Alternative, would be environmentally superior to the project on the basis of its minimization or avoidance of physical environmental impacts. However, *CEQA Guidelines* Section 15126.6(e)(2) states:

The “no project” analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, 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. If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, agriculture and forestry resources, air quality, and biological resources. Impacts related to GHG emissions would be greater under this alternative due to the assumed lower efficiency of the distributed systems, which would not include solar tracking technology and it would not include BESS. This alternative could

potentially result in greater impacts to land use and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, the No Ground-Mounted Utility-Solar Development Alternative would result in less impact to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, public services, transportation and traffic, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the proposed project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the proposed project because the project proponent lacks control and access to the sites required to develop 60 MW of distributed solar generated electricity; additionally, doing so would be economically infeasible. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

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Chapter 7

Response to Comments

This chapter is being reserved for, and will be included with, the Final EIR.

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Chapter 8

Organizations and Persons Consulted

8.1 Federal

China Lake Naval Weapons Center	U.S. Department of Agriculture
Edwards Air Force Base, Mission Sustainability Liaison	U.S. Environmental Protection Agency Region IX Office
Natural Resource Conservation Service	U.S. Fish and Wildlife Service, Division of Ecological Services
U.S. Air Force	U.S. Marine Corps
U.S. Army	U.S. Navy
U.S. Army Corp of Engineers, Regulatory Division	U.S. Postal Service, Address Management Systems
U.S. Bureau of Land Management	

8.2 State of California

California Air Resources Board	California State University Bakersfield - Library
California Department of Fish & Wildlife, Fresno Region	Caltrans District 6
California Department of Water Resources, Division of Land & Right-of-Way	Caltrans District 9
California Energy Commission	Public Utilities Commission, Energy Division
California Native American Heritage Commission	State Department of Conservation, Director's Office
California Public Utilities Commission, Energy Division	State Department of Conservation, Geologic Energy Management Division
California Regional Water Quality Control Board, Central Valley Region	State Department of Conservation, Office of Land Conservation
California State Clearinghouse	State Dept of Parks & Recreation Tehachapi District
	State Water Resources Control Board Division of Drinking Water

8.3 Regional and Local

Adams, Broadwell, Joseph & Cardozo	Kern County Agriculture Department	Los Angeles County Regional Planning Department
Bakersfield City Planning Department	Kern County Environmental Health Services Department	Lost Hills Water District
		Lozeau Drury LLP
		Michael Strickler

Bakersfield City Public Works Department	Kern County Public Works Department/Building and Development/Floodplain	Pacific Gas & Electric Company
Bill Barnes		Renewal Resources Group Holding Company
California City Planning Department	Kern County Public Works Department/Building and Development/Survey	Recurrent Energy
Carol Lawhon	Kern County Public Works Department/Building and Development/Development Review	Robert Burgett
Center on Race, Poverty & the Environment	Kern County Public Works Department/Operations and Maintenance/Regulatory Monitoring and Reporting	Rosedale-Rio Bravo Water Dist
Center on Race, Poverty and the Environmental/CA Rural Legal Assistance Foundation	Kern County Public Works Department/Building & Development/Code Compliance	San Bernardino County Planning Department
Chumash Council of Bakersfield	Kern County Sheriff's Department	San Fernando Band of Mission Indians
City of Maricopa	Kern County Superintendent of Schools	San Joaquin Valley Air Pollution Control District
City of McFarland	Kern County Water Agency	San Luis Obispo County Planning Department
City of Ridgecrest	Kings County Planning Agency	Santa Barbara County Resource Management Department
City of Shafter	Kern High School District	Santa Rosa Rancheria
City of Taft	Kern Valley Indian Council	Sarah K. Friedman
City of Tehachapi	Kern Valley Indian Council Historic Preservation Office	Sierra Club/Kern Kaweah Chapter
City of Wasco	Kitanemuk & Yowlumne Tejon Indians	South San Joaquin Valley Archaeological Information Center
Congentrix Sunshine, LLC	Laborers' International Union of North America (LIUNA)	Southern California Gas Company
County Clerk	Leadership Counsel for Justice & Accountability	Southern California Gas Company, Transportation Department
Darren Kelly	Los Angeles Audubon	Structure Cast
David Laughing Horse Robinson	Los Angeles County Regional Planning Department	Tejon Indian Tribe
David Walsh	Lost Hills Water District	Terra-Gen Power, LLC
Defenders of Wildlife/Kim Delfino, California Director	Lozeau Drury LLP	The Gorman Law Firm
Delano City Planning Department	Michael Strickler	Tubatulabals of Kern County
EDP Renewables Company	Pacific Gas & Electric Company	Tulare County Planning and Development Department
Fotowatio Renewable Ventures		Tule River Indian Tribe
Iberdrola Renewables		Ventura County Resource Management Agency, Planning Division
Inyo County Planning Department		
Kern County Fire Department, David Witt, Fire Chief		
Kern County Fire Department, Cary Wright, Fire Marshall		

Kern County Library Beale Branch, Andie Sullivan	Renewal Resources Group Holding Company	Vesta
Kern County Library Beale Branch, Local History Room	Recurrent Energy	Wasco Union Elementary School District
Kern County Museum	Robert Burgett	Wayne Mayes
Kern County Parks and Recreation	Rosedale-Rio Bravo Water Dist	Wasco Union High School District
Kelly Group		West Side Mosquito Abatement District
Kern Audubon Society		Wind Stream, LLC
Kern County Administrative Officer		
Kern County Council of Governments		

8.4 Tribal Organizations

Santa Rosa Rancheria	Torres Martinez Desert Cahuilla Indians
San Manuel Band of Mission Indians	Twenty-Nine Palms Band of Mission Indians
Tejon Indian Tribe	

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Chapter 9

List of Preparers

9.1 Lead Agency

Kern County Planning and Natural Resources Department

Lorelei H. Oviatt, AICP – Director

Craig M. Murphy – Assistant Director

Katrina A. Slayton – Advanced Planning Division Chief

Terrance Smalls – Supervising Planner

9.2 Technical Assistance

Kimley-Horn

Alex Jewell – AICP - Senior Planner/Project Manager

Brad Stoneman – Senior Environmental Planner

Randall Kopff – Landscape Architect

Achilles Malisos – Technical Study Manager

Rich Lucera, P.E. – Hydrology and Water Quality Engineer

Addie Sedoff – Environmental Planning Analyst

Prathna Maharaj - Environmental Planning Analyst

Taylor Blanford – Environmental Planning Analyst

Mason Flood – Planning Analyst

Surf to Snow Environmental Resource Management, Inc. (S2S)

Brian Frantz – Chief Operating Officer

Bob Masuoka – Principal Regulatory Specialist

BSK Associates

Corrine Goodwin, PE – Project Engineer

On Man Lau, PE, GE – South Valley Regional Manager

Stantec

Kelsey Carton

Sandhya Perumalla

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Chapter 11

Acronyms and Abbreviations

AAQA	ambient air quality analysis
AB	Assembly Bill
AC	alternating current
ACHP	Advisory Council on Historic Preservation
ACOE	Army Corps of Engineers
AFB	Air Force Base
AF	acre-feet
AFY	acre-feet per year
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standard Institute
APCD	Air Pollution Control District
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee's
APN	Assessor Parcel Number
AQAP	Air Quality Attainment Plan
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ARP	accidental release prevention
ARPA	Archeological Resources Protection Act
ASCE	American Society of Civil Engineers
ASF	age sensitivity factor
AVAQMD	Antelope Valley Air Quality Management District
AVEK	Antelope Valley-East Kern
BLM	Bureau of Land Management
BMCM	bulk material control measures
BMPs	best management practices
BRTR	Biological Resources Technical Report
C&D	Construction and Demolition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CaCO ₃	calcium carbonate

CAFE	corporate average fuel economy
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCAA	Clean Air Act of 1988
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CDC	Center for Disease Control
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CDOC	California Department of Conservation
CEC	California Energy Commission
CERS	California Environmental Reporting System
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH ₄	methane
CHL	California Historical Landmarks
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CMA	Congestion Management Agency
CMP	Congestion Management Plan
CNDDB	Fish and Game Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
COG	Council of Governments
CPUC	California Public Utility Commission
CREC	controlled recognized environmental conditions

CRHR	California Register of Historical Resources
CRPC	California Rare Plant Rank
CSLC	California State Lands Commission
CSP	concentrated solar power
CUP	conditional use permit
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
DAT	dual access tracker
dba	decibel
DC	direct current
DEIR	draft environmental impact report
DI	drilling island
DOC	Department of Conservation
DOGGR	Division of Oil, Gas, and Geothermal Resources
DNL	Day-Night Average Sound Level
DPM	diesel particulate matter
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECCMP	Environmental and Construction Compliance Monitoring Plan
EIR	Environmental Impact Report
EKAPCD	Eastern Kern Air Pollution Control District
EMF	electromagnetic field
EMT	emergency medical technician
EO	Executive Order
EPA	Environmental Protection Agency
EPS	Emissions Performance Standard
ESA	Endangered Species Act
ESS	Energy Storage System
FAA	Federal Aviation Administration
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone

FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FR	Federal Register
FRA	Federal Responsibility Area
FRAP	Fire and Resource Assessment Program
FTA	Federal Transit Administration
FTE	full-time equivalent
FTIP	Federal Transportation Improvement Program
GDP	Gross Domestic Product
GHG	greenhouse gas
GIS	geographic information system
GO	general order
GPS	global positioning system
GSP	groundwater sustainability plan
GWP	Global Warming Potential
H2O	water
HAPs	total hazardous air pollutants
HCP	habitat conservation plan
HFC	hydrofluorocarbons
HHWE	Hazardous Waste Element
HM	habitat management
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Management Plan
HRA	Health Risk Assessment
HREC	historical recognized environmental conditions
HSAT	horizontal single axis tracker
HSWA	Hazardous Solid Waste Act
HUD	Department of Housing and Urban Development
HVAC	heating/ventilation/air conditioning
HWMP	Hazardous Waste Management Plan
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan

IPCC	Intergovernmental Panel on Climate Change
IS/NOP	Initial Study/Notice of Preparation
IVIRWMP	Antelope Valley Integrated Regional Water Management Plan
KEDC	Kern Economic Development Cooperation
KCFD	Kern County Fire Department
KCGP	Kern County General Plan
KCOG	Kern Council of Governments
KCPD	Kern County Planning Department
KCSO	Kern County Sheriff's Department
KOP	Key Observation Point
LACM	Museum of Los Angeles County
LADWP	Los Angeles Department of Water and Power
LCFS	Low Carbon Fuel Standard
LID	low impact design
LLC	Limited Liability Corporation
LOS	Level of Service
LRA	local responsibility area
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MDAB	Mojave Desert Air Basin
MM	mitigation measure
MMRCP	Monitoring, Reporting, and Compliance Program
MOUs	Memoranda of Understanding
MRZs	Mineral Resource Zones
MT	metric tons
MV	medium voltage
MW	megawatts
NO _x	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCP	National Contingency Act
NCCP	Natural Communities Conservation Plan
NDFE	Nondisposal Facility Element

NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NF3	nitrogen trifluoride
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NOx	nitric oxide
NO2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NOP/IS	Notice of Preparation and Initial Study
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NR	natural resources
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
O3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OHV	off-highway vehicle
OSHA	Occupational Safety and Health Administrations
OPR	California Governor's Office of Planning and Research
PCE	passenger car equivalent
PCS	power conversion station
PCT	Pacific Crest Trail
PE	petroleum extraction
PFC	perfluorocarbons
PHI	points of historic interest
PL	platted lands
PM	particulate matter
PM10	Respirable Particulate Matter
PM2.5	Fine Particulate Matter

PPA	Power Purchase Agreement
PPV	peak particle velocity
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PV	solar photovoltaic
PVC	polyvinyl chloride
PVSC	PV combining switchgear
R-2	Medium-density Residential
RACM	reasonably available control measures
RCRA	Resource Conservation and Recovery Act
RCSD	Rosamond Community Services District
RE	Recurrent Energy
REC	recognized environmental condition
RHNA	Regional Housing Needs Allocation
RMS	root mean square
ROGs	reactive organic gases
ROWs	Rights-of-Way
RPS	Renewable Portfolio Standard
RS	Residential Suburban
RTP	Regional Transportation Plan
RV	recreational vehicle
RWMG	Regional Water Management Group
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBBM	San Bernardino Base and Meridian
SBCM	San Bernardino County Museum
SC	sectionalizing cabinets
SCC	site control centers
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCC	site control center
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SDC	seismic design category
SDNHM	San Diego Natural History Museum

SF6	sulfur hexafluoride
SGHAT	Solar Glare Hazard Analysis Tool
SGMA	Sustainable Groundwater Management Agency
SHPO	State Historic Preservation Officer
SIPs	State Implementation Plans
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SKUSD	Southern Kern Unified School District
SLAMS	State and Local Air Monitoring Stations
SLF	sacred lands file
SMARA	Surface Mining and Reclamation Act of 1975
SO _x	sulfur oxides
SO2	sulfur dioxide
SPA	specific plan amendment
SPCC	Prevention, Control, and Countermeasure
SR	State Route
SRAs	State Responsibility Areas
SRRE	Source Reduction and Recycling Element
SSC	Species of Special Concern
SSJVIC	San Joaquin Valley Archaeological Information Center
STIP	State Transportation Improvement Program
SVP	Society of Vertebrate Paleontology
SWANCC	Solid Waste Agency of Northern Cook County
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TAZ	Traffic Analysis Zones
UBC	Uniform Building Code
UL	Underwriters Laboratory
USC	United States Code
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USPS	United States Postal Service

UST	underground storage tank
UV	ultraviolet
VMT	vehicle miles traveled
VOCs	volatile organic compounds
VRM	Visual Resource Management
WRCC	Western Regional Climate Center
WSA	water supply assessment
ZCC	zone change
ZEV	zero-emissions vehicle

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