Draft
Environmental Impact Report

SCH# 2021040761

Volume 1

Chapters 1 through 10

SANDRINI SOLAR PROJECT

by EDPR CA Solar Park, LLC

(PP20402)

Conditional Use Permit No. 9, Map No. 159;
Conditional Use Permit No. 27, Map No. 160;
Conditional Use Permit No. 28, Map No. 160;
Conditional Use Permit No. 29, Map No. 160;
Conditional Use Permit No. 27, Map No. 161;
General Plan Amendment No. 2, Map No. 159 (Circulation);
General Plan Amendment No. 3, Map No. 160 (Circulation);
General Plan Amendment No. 4, Map No. 161 (Circulation);
Williamson Act Land Use Contract Cancellations

Kern County
Planning and Natural Resources Department
Bakersfield, California

September 2021

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PLANNING AND NATURAL RESOURCES DEPARTMENT

Planning
Community Development
Administrative Operations

September 17, 2021

File: CUP #9, Map #159 and various others
S.D. #2 – Scrivner and S.D #4 – Couch

ADDRESSEE LIST (See Distribution List)

Re: Draft Environmental Impact Report for the Sandrini Solar Project by EDPR CA Solar Park (EDP Renewables, LLC) (SCH #2021040761)

Dear Interested Party:

Kern County has prepared a Draft Environmental Impact Report (Draft EIR) for the above-noted land use applications to allow for the construction and operation of a solar photovoltaic power generating facility and associated facilities that would produce up to 300 megawatt (MW) alternating current (AC) utility-scale solar power with an up to 100 MW of energy storage capacity in the Valley Region of unincorporated Kern County. The proposed project consists of five separate sites (Sites 1 through 5), located on 33 parcels of privately-owned land, totaling approximately 3,469.87 acres; however, it is anticipated that approximately 2,472.89 acres would be utilized (developed) for the construction of the solar panels and permanent facilities and the remaining 996.98 acres would be restricted to use for conservation of habitat (on-site conservation land) and could not be developed.

The project is located northwest of the community of Mettler, southeast of the community of Kern Lake, and adjacent to Interstate I-5, State Route SR-99, and State Route SR-166, within Township 32S, Range 26E, Section 25; Township 32S, Range 27E, Section 30; Township 32S, Range 27E, Section 29; Township 32S, Range 27E, Section 28; Township 32S, Range 27E, Section 32; Township 32S, Range 27E, Section 33; Township 32S, Range 28E, Section 31; and Township 32S, Range 27E, Section 34, Mount Diablo Base and Meridian, County of Kern, State of California.

Implementation of the project as proposed includes the following requests:

a) Conditional Use Permits (CUPs) to allow for the construction and operation of four solar facilities with a total generating capacity of approximately 300 MW AC of renewable energy (broken down by site, below) including up to 100 MW of combined energy storage (for all sites), within the A (Exclusive Agriculture) Zone District (in Zone Maps 159, 160, and 161) pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.

   Site 1 (up to 20 MWac)

   - CUP No. 9, Map No. 159 for approximately 160 acres

   Site 2 (up to 235 MWac)

   - CUP No. 27, Map No. 160 for approximately 1,229.37 acres

Site 3 (up to 125 MWac)

- CUP No. 28, Map No. 160 for approximately 789.21acres

Site 4 (up to 30 MWac)

- CUP No. 27, Map No. 161 for approximately 289.11 acres

Site 5 – Onsite conservation lands for benefit of solar project

- CUP No. 29, Map 160 for approximately 996.98 acres

b) General Plan Amendment to the Circulation Element of the Kern County General Plan to remove future road reservations on the section and mid-section lines within the project boundaries:

- General Plan Amendment No. 2, Map No. 159
- General Plan Amendment No. 3, Map No. 160
- General Plan Amendment No. 4, Map No. 161

c) Williamson Act Land Use Contract Cancellations:

- No. 21-01
  - Cancellation of approximately 289.11 acres from Document No. 28397, Book 4273, page 13
- No. 21-03
  - Cancellation of approximately 427.65 acres from Document No. 10965, Book 4373, page 24
- No. 21-04
  - Cancellation of approximately 338.35 acres from Document No. 28386, Book 4272, page 933

The project would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge Substation. Both lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. Any overhead electrical transmission lines may be additionally supported by guy-wires. Additionally, 34.5 kV collector lines would connect the various project components to transmit energy to the larger transmission line system.

The Kern County Planning and Natural Resources Department, as Lead Agency, has determined that preparation of an Environmental Impact Report would be appropriate for the referenced project. Enclosed is a copy of the Draft EIR. If we have not received a reply from you by **November 1, 2021, 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 (661) 862-8638 or via email at JensenJ@kerncounty.com.

Sincerely,

Johnathan Jensen, Planner II
Advanced Planning Division

I:\Planning\WORKGRPS\WP\LABELS\
eir07-19(Revised 04-22-21)Sandrini-
nop.docx
cp04/22/21

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
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Delano, CA 93216

City of Maricopa
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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

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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

Kern River Groundwater Sustainability Agency
c/o City of Bakersfield
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Bakersfield, Ca 93301

San Luis Obispo Co Planning Dept
Planning and Building
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San Luis Obispo, CA 93408

Santa Barbara Co Resource Mgt Dept
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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

China Lake Naval Weapons Center
Tim Fox, RLA - Comm Plans & Liaison
429 E Bowen, Building 981
Mail Stop 4001
China Lake, CA 93555

Edwards AFB, Mission Sustainability Liaison
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Edwards AFB, CA 93524

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

Environmental Protection Agency
Region IX Office
75 Hawthorn Street
San Francisco, CA 94105

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

U.S. Army Corps of Engineers
Regulatory Division
1325 "J" Street, #1350
Sacramento, CA 95814-2920

State Air Resources Board
Stationary Resource Division
P.O. Box 2815
Sacramento, CA 95812

So. San Joaquin Valley Arch Info Ctr
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9001 Stockdale Highway
Bakersfield, CA 93311

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Fresno, CA 93778

Caltrans/
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P.O. Box 1499
Sacramento, CA 95807

State Clearinghouse
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Sacramento, CA 95814

State Dept of Conservation
Director's Office
801 "K" Street, MS 24-01
Sacramento, CA 95814-3528

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

State Dept of Conservation
Office of Land Conservation
801 "K" Street, MS 18-01
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Bakersfield - Library
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Bakersfield, CA 93309

California Energy Commission
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Sacramento, CA 95814

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

California Highway Patrol
Planning & Analysis Division
P.O. Box 942898
Sacramento, CA 94298-0001

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

California Regional Water Quality
Control Board/Central Valley Region
1685 E Street
Fresno, CA 93706-2020

State Dept of Toxic Substance Control
Environmental Protection Agency
1515 Tollhouse Road
Clovis, CA 93612

Cal Environmental Protection Agency/
Dept of Toxic Substances Control, Reg 1
Attn: Dave Kereazis, Permit Div - CEQA
8800 Cal Center Drive, 2nd Floor
Sacramento, CA 95826

State Dept of Water Resources
San Joaquin Dist.
3374 East Shields Avenue, Room A-7
Fresno, CA 93726

Kern County
Agriculture Department

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
Michael Nicholas,
Assistant Fire Marshal

Kern County Library/Beale
Local History Room

Kern County Library/Beale
Andie Sullivan

Kern County Library
Frazier Park Branch

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

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Bill Deaver, President
P.O. Box 1113
Mojave, CA 93502-1113

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

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955 Stanislaus Street
Maricopa, CA 93252

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14535 Old River Road
Bakersfield, CA 93311

General Shafter School Dist
1825 Shafter Road
Bakersfield, CA 93313

Panama-Buena Vista School Dist
4200 Ashe Road
Bakersfield, CA 93313

Arvin-Edison Water Storage Dist
P.O. Box 175
Arvin, CA 93203

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

KernCOG
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Bakersfield, CA 93301

Local Agency Formation Comm/LAFCO
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Bakersfield, CA 93309

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12109 Highway 166
Bakersfield, CA 93313-9630

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Kern County Parks & Recreation

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

San Joaquin Valley
Air Pollution Control District
1990 East Gettysburg Avenue
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Kern Mosquito Abatement Dist
4705 Allen Road
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South San Francisco, CA 94080

U.S. Air Force
Attn: David Bell/AFCEC CZPW
Western Regional/Leg Branch
510 Hickam Avenue, Bld 250-A
Travis AFD, CA 94535-2729

U.S. Army
Attn: Philip Crosbie, Chief
Strategic Plans, S3, NTC
P.O. Box 10172
Fort Irwin, CA 92310

U.S. Army
Attn: Tim Kilgannon, Reg 9 Coord
Office of Strategic Integration
721 - 19th Street, Room 427
Denver, CO 80202

U.S. Navy
Attn: Plans & Liaison Officer
1220 Pacific Highway
San Diego, CA 92132-5190

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Los Angeles Audubon
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Los Angeles, CA 90036-4929

Center on Race, Poverty & the Environment
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Kern Valley Indian Council
Attn: Robert Robinson, Chairperson
P.O. Box 401
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Kern Valley Indian Council
Historic Preservation Office
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Kitanemuk & Yowlumne Tejon Indians
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Neal Peyron, Chairperson
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Ms. Rebecca De Leon
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Terra-Gen Power, LLC
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New York, NY 10036-6797

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NOTICE OF AVAILABILITY FOR PUBLIC REVIEW AND HEARING ON THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED ARATINA 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: EIR07-19: Sandrini Solar Project by EDPR CA Solar Park, LLC (EDP Renewables); Conditional Use Permit No. 9, Map No. 159; Conditional Use Permit No. 27, Map No. 160; Conditional Use Permit No. 28, Map No. 160; Conditional Use Permit No. 29, Map No. 160; Conditional Use Permit No. 27, Map No. 161; General Plan Amendment No. 2, Map No. 159 (Circulation); General Plan Amendment No. 3, Map No. 160 (Circulation); General Plan Amendment No. 4, Map No. 161 (Circulation); and Williamson Act Land Use Contract Cancellations (SCH #2021040761)

PROJECT LOCATION: The project is located northwest of the community of Mettler, southeast of the community of Kern Lake, and adjacent to Interstate I-5, State Route SR-99, and State Route SR-166, within Township 32S, Range 26E, Section 25; Township 32S, Range 27E, Section 30; Township 32S, Range 27E, Section 29; Township 32S, Range 27E, Section 28; Township 32S, Range 27E, Section 32; Township 32S, Range 27E, Section 33; Township 32S, Range 28E, Section 31; and Township 32S, Range 27E, Section 34, Mount Diablo Base and Meridian, County of Kern, State of California.

DOCUMENT AVAILABILITY: The document and documents referenced in the Draft EIR are available for review at the Planning 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 9, 2021**
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 November 1, 2021, 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 November 1, 2021, at 5:00 p.m. to:

Kern County Planning and Natural Resources Department
ATTN: Johnathan Jensen, Planner II
2700 "M" Street, Suite 100, Bakersfield, CA 93301
Phone: (661) 862-8638
E-mail: jensenj@kerncounty.com

PROJECT DESCRIPTION: The project includes a request for land use entitlements necessary to facilitate the construction and operation of a solar photovoltaic power generating facility and associated facilities that would produce up to 300 megawatt (MW) alternating current (AC) utility-scale solar power with an up to 100 MW of energy storage capacity in the Valley Region of unincorporated Kern County. The proposed project consists of five separate sites (Sites 1 through 5), located on 33 parcels of privately-owned land, totaling approximately 3,469.87 acres; however, it is anticipated that approximately 2,472.89 acres would be utilized (developed) for the construction of the solar panels and permanent facilities and the remaining 996.98 acres would be restricted to use for conservation of habitat (on-site conservation land) and could not be developed.

Implementation of the project as proposed includes the following requests:

a) Conditional Use Permits (CUPs) to allow for the construction and operation of four solar facilities with a total generating capacity of approximately 300 MW AC of renewable energy (broken down by site, below) including up to 100 MW of combined energy storage (for all sites), within the A (Exclusive Agriculture) Zone District (in Zone Maps 159, 160, and 161) pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance.

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- No. 21-04
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The project would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge Substation. Both lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. Any overhead electrical transmission lines may be additionally supported by guy-wires. Additionally, 34.5 kV collector lines would connect the various project components to transmit energy to the larger transmission line system. 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.

ENVIRONMENTAL REVIEW FINDINGS: Anticipated significant and unavoidable impacts on Aesthetics (Project and Cumulative); Agriculture and Forestry Resources (Project and Cumulative); Air Quality (Project and 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

JJ:CC (09/17/21)

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

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Sandrini Solar Project
I:\Planning\WORKGRPS\WP\LABELS\eir 07-19Sandrini.docx
cc 09/07/2021

445 061 09 00 5
BIDART BROS INC
4813 CALLOWAY DR
BAKERSFIELD CA 93312-9702

295 100 15 00 3
BOSTON RANCH CO
PO BOX 877
CORCORAN CA 93212-0877

295 050 17 00 5
C & A FARMS LLC
1306 W HERNDON AV STE 106
FRESNO CA 93711-7183

295 130 81 00 3 **DUP**
C & A FARMS LLC
1396 W HERNDON AV STE 101
FRESNO CA 93711-7183

295 130 85 00 5 **DUP**
C & A FARMS LLC
1306 W HERNDON AV STE 101
FRESNO CA 93711-7183

295 270 23 00 6
CALIFORNIA RESOURCES PETROLEUM CORPORATION
27200 TOURNEY RD STE 200
SANTA CLARITA CA 91355-4910

445 073 15 00 9
CROP PRODUCTION SERVICES INC
3005 ROCKY MOUNTAIN AV
LOVELAND CO 80538

295 120 03 00 4
DIAMOND FARMING CO
P O BOX 81498
BAKERSFIELD CA 93380-1498

295 130 78 00 5
ECHEVERRIA F & I FAMILY TRUST
13441 EBERLE RD
BAKERSFIELD CA 93313-9797

295 130 39 00 2 **INC**
GOLDEN EXPRESS TRUCKING USA INC
27300 OLD RIVER ROAD
BAKERSFIELD CA 93311
*

295 130 66 00 0
GRAPEVINE ENERGY LLC
5330 OFFICE CENTER CT STE 75
BAKERSFIELD CA 93309

295 100 47 00 6
GRIMM BARBARA M TRUST
7158 BUENA VISTA RD
BAKERSFIELD CA 93311-9425

295 130 41 00 7
JOO FAMILY TRUST
1134 PASADERO DR
ESCONDIDO CA 92029-3011

445 062 06 00 3
JOSEPH VINEYARD ESTS LLC
2800 ROAD 136
DELANO CA 93215

295 100 20 00 7
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1 RUE BIARRITZ
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BAKERSFIELD CA 93313-9659

295 030 39 00 3
MFC KERN I LLC
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295 210 01 00 4
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295 050 37 00 3
NAHABEDIAN EXPLORATION GROUP LLC (THE)
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OJAI CA 93023-4209

295 100 40 00 5
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DIAMOND BAR CA 91765-4353

295 050 58 00 4
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MCFARLAND CA 93250-9606

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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 # 2021040761

Project Title: Sandrini Solar Project by EDPR CA Solar Park, LLC

Lead Agency: Kern County Planning and Natural Resources Dept | Contact Person: Johnathan Jensen
Mailing Address: 2700 "M" Street Suite 100 | Phone: (661) 862-8638
City: Bakersfield | Zip: 93301-2323 | County: Kern

Project Location: County: Kern | City/Nearest Community: Town of Mettler
Cross Streets: Copus Road and Old River Blvd. | Zip Code: 93311
Lat. / Long.: 35°6'28.85" N / 119° 5'29.15"W | Total Acres: 3,469.87
Assessor's Parcel No.: Multiple | Section: Multiple | Twp.: 32S | Range: Multiple | Base: MDB&M
Within 2 Miles: State Hwy #: SR 99, SR 166 | Waterways:
Airports: | Railways: | Schools:

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☒ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Other
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other

Local Action Type:

☐ General Plan Update ☒ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☒ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other - WALUC

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational
☐ Recreational
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type
☐ Mining: Mineral
☒ Power: Type Solar MW 300
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type
☒ Other: Battery Energy Storage – 100 MW

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☒ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☒ Economic/Jobs
☐ Fiscal
☒ Flood Plain/Flooding
☒ Forest Land/Fire Hazard
☒ Geologic/Seismic
☒ Minerals
☒ Noise
☒ Population/Housing Balance
☒ Public Services/Facilities
☒ Recreation/Parks
☒ Schools/Universities
☒ Septic Systems
☒ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☒ Solid Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation
☒ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Wildlife
☒ Growth Inducing
☒ Land Use
☒ Cumulative Effects
☒ Other GHG, Wildfire, Tribal Cultural Resources, Energy

Present Land Use/Zoning/General Plan Designation:

Undeveloped Land/*Kern County General Plan:* 8.1 (Intensive Agriculture), 8.1/2.3 (Intensive Agriculture/Shallow Groundwater), and 8.1/2.5 (Intensive Agriculture/Flood Hazard). *Kern County Zoning:* A (Exclusive Agriculture).

Project Description:

The Sandrini Solar Project (proposed project or project) as proposed by EDPR CA Solar Park, LLC (project proponent) would allow for the construction and operation of a solar photovoltaic power generating facility and associated facilities that would produce up to 300 megawatt (MW) alternating current (AC) utility-scale solar power with an up to 100 MW of energy storage capacity in the Valley Region of unincorporated Kern County. The proposed project consists of five separate sites (Sites 1 through 5), located on 33 parcels of privately-owned land, totaling approximately 3,469.87 acres; however, it is anticipated that approximately 2,472.89 acres would be utilized (developed) for the construction of the solar panels and permanent facilities and the remaining 996.98 acres would be restricted to use for conservation of habitat (on-site conservation land) and could not be developed. In addition to the photovoltaic solar arrays and associated equipment as proposed, other permanent facilities would be installed as part of the project including service access roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, two collector substations, inverter stations, an up to 100 MW battery energy storage system, and operations and maintenance (O&M) facilities.

The project would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge Substation. Both lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. Any overhead electrical transmission lines may be additionally supported by guy-wires. Additionally, 34.5 kV collector lines would connect the various project components to transmit energy to the larger transmission line system.

Implementation of the project as proposed would require: CUP 9, Map #159; CUP 27, Map #160; CUP 28, Map #160; CUP 29, Map #160; CUP 27, Map #161; GPA 2, Map #159 (Circulation); GPA 3, Map #160 (Circulation); GPA 4, Map #161(Circulation); and Williamson Act Land Use Cancellations #21-01, #21-03, and #21-04.

Reviewing Agencies Checklist

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

S	Air Resources Board		Office of Emergency Services
	Boating & Waterways, Department of	X	Office of Historic Preservation
S	California Highway Patrol		Office of Public School Construction
X	CalFire	S	Parks & Recreation
S	Caltrans District # 6		Pesticide Regulation, Department of
S	Caltrans Division of Aeronautics	S	Public Utilities Commission
	Caltrans Planning (Headquarters)	S	Regional WQCB # Central
	Central Valley Flood Protection Board		Resources Agency
	Coachella Valley Mountains Conservancy		S.F. Bay Conservation & Development Commission
	Coastal Commission		San Gabriel & Lower L.A. Rivers and Mtns Conservancy
	Colorado River Board		San Joaquin River Conservancy
S	Conservation, Department of		Santa Monica Mountains Conservancy
	Corrections, Department of		State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of		SWRCB: Water Quality
S	Energy Commission		SWRCB: Water Rights
S	Fish & Game Region # Fresno		Tahoe Regional Planning Agency
	Food & Agriculture, Department of	S	Toxic Substances Control, Department of
	General Services, Department of	S	Water Resources, Department of
	Health Services, Department of		
	Housing & Community Development		Other _____
	Integrated Waste Management Board		Other _____
S	Native American Heritage Commission		

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

Starting Date September 17, 2021 Ending Date November 1, 2021

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:** 9/17/2021

Johnathan Jensen, Planner II

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

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Draft
Environmental Impact Report

SCH# 2021040761

Volume 1

Chapters 1 through 10

SANDRINI SOLAR PROJECT

by EDPR CA Solar Park, LLC

(PP20402)

Conditional Use Permit No. 9, Map No. 159;
Conditional Use Permit No. 27, Map No. 160;
Conditional Use Permit No. 28, Map No. 160;
Conditional Use Permit No. 29, Map No. 160;
Conditional Use Permit No. 27, Map No. 161;
General Plan Amendment No. 2, Map No. 159 (Circulation);
General Plan Amendment No. 3, Map No. 160 (Circulation);
General Plan Amendment No. 4, Map No. 161 (Circulation);
Williamson Act Land Use Contract Cancellations

Kern County
Planning and Natural Resources Department
Bakersfield, California

Technical Assistance by:
Dudek

September 2021

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AAQA	ambient air quality analysis
AB	Assembly Bill
AC	alternating current
AERMOD	American Meteorological Society/EPA Regulatory Model
AFY	acre-feet per year
AGS	Annual Grassland
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
APN	Assessor's Parcel Number
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ASCE	American Society of Civil Engineers
BACM	best available control measures
BACT	Best Achievable Control Technology
BAU	business as usual
BESS	battery energy storage system
BGEPA	Bald and Golden Eagle Protection Act
bgs	below the ground surface
BMP	best management practice
BNLL	blunt-nosed leopard lizard
BPS	best performance standards
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
CalGEM	California Geologic Energy Management Division
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CDC	Center for Disease Control
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFC	chlorofluorocarbons
CFR	Code of Federal Regulations
CH_4	methane
CHL	California Historical Landmark
CHP	California Highway Patrol
CIC	Cumulative Impact Charge

Acronym/Abbreviation	Definition
CMA	Congestion Management Agency
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COG	Council of Governments
County	County of Kern
CPUC	California Public Utilities Commission
CRC	California Resource Company
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CVP	Central Valley Project
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
dB	decibel
dBA	A-weighted decibel
DC	direct current
DGR	Dryland Grain Crops
DOC	California Department of Conservation
DOR	Deciduous Orchard
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EIR	Environmental Impact Report
EMF	electromagnetic field
EMS	Emergency Medical Services
EO	Executive Order
EPA	Environmental Protection Agency
EPS	Emissions Performance Standard
ESA	Ecologically Sensitive Area
ESS	Energy Storage Systems
EUA	Energy Utilization Analysis
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHSZ	Fire Hazards Severity Zone
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FPS	Floodplain Secondary
FRAP	Fire and Resource Assessment Program
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas
GLC	ground-level concentration

Acronym/Abbreviation	Definition
GO	General Order
GPA	General Plan Amendment
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWP	global warming potential
H_2S	hydrogen sulfide
HASP	Health and Safety Plan
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HHWE	Hazardous Waste Element
HSC	Health and Safety Code
HUC	Hydrologic Unit Code
HVAC	heating, ventilation, and air conditioning
I	Interstate
IEC	International Electrotechnical Commission
IFC	International Fire Code
IGR	Irrigated Grain and Seed Crops
IPaC	Information for Planning and Consultation
IRF	Irrigated Row and Field Crops
IRH	Irrigated Hayfield
IRWMP	Integrated Regional Water Management Plan
IS	Initial Study
ITP	Incidental Take Permit
IWMP	Integrated Waste Management Plan
KCFD	Kern County Fire Department
KCOG	Kern Council of Governments
KCPWD	Kern County Public Works Department
KCSO	Kern County Sheriff's Office
KCVFHCP	Kern County Valley Floor Habitat Conservation Plan
KCWA	Kern County Water Agency
KEDC	Kern Economic Development Corporation
KOP	key observation point
KSA	Kern Sanitation Authority
kV	kilovolt
LCFS	Low Carbon Fuel Standard
LESA	Land Evaluation and Site Assessment
LID	low-impact development
LOS	level of service
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MEIR	maximally exposed individual residence
MM	Mitigation Measure
MMT	million metric tons
MRZ	Mineral Resource Zone
MT	metric ton
MV	medium voltage
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act

Acronym/Abbreviation	Definition
NAHC	Native American Heritage Commission
NCP	National Contingency Plan
NDFE	Nondisposal Facility Element
NDGPS	Nationwide Differential Global Positioning System
NEHRP	National Earthquake Hazards Reduction Program
NF_3	nitrogen trifluoride
NFPA	National Fire Protection Association
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NIMS	National Incident Management System
NO	nitric oxide
NO_2	nitrogen dioxide
NO_3	nitrates
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O&M	operations and maintenance
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administrations
PFC	perfluorocarbon
PG&E	Pacific Gas & Electric
PI	Plasticity Index
PM	particulate matter
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter
POI	point of interconnection
PPV	peak particle velocity
PRC	Public Resources Code
project	Sandrini Solar Project
PV	photovoltaic
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
REL	reference exposure level
RHNA	Regional Housing Needs Allocation
RMS	root mean square
ROG	reactive organic gas
ROW	right-of-way
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCE	Southern California Edison

Acronym/Abbreviation	Definition
SCIC	Supplemental Cumulative Impact Charge
SCS	Sustainable Communities Strategy
SEIA	Solar Energy Industry Association
SEMS	Standardized Emergency Management System
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIL	significant impact level
SIP	State Implementation Plan
SJKF	San Joaquin kit fox
SJVAPCD	San Joaquin Valley Air Pollution Control District
SJVR	San Joaquin Valley Railroad
SLF	Sacred Lands File
SMBMI	San Manuel Band of Mission Indians
SO_2	sulfur dioxide
SO_4	sulfates
SPCC	spill prevention, control, and countermeasure
SR	State Route
SRA	State Responsibility Area
SRRE	Source Reduction and Recycling Element
SSURGO	U.S. Department of Agriculture Survey Geographic
STIP	State Transportation Improvement Program
SWANCC	Solid Waste Agency of Northern Cook County
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAZ	Traffic Analysis Zone
TCM	transportation control measure
TIA	Traffic Impact Analysis
UAS	unmanned aircraft system
UL	Underwriters Laboratory
URB	Urban
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UTM	Universal Transverse Mercator
VHFSZ	Very High Fire Hazard Severity Zone
VIN	Vineyard
VMT	vehicle miles traveled
VOC	volatile organic compound
WRMWSD	Wheeler Ridge–Maricopa Water Storage District
ZEV	zero emissions vehicle
ZNE	zero net energy

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Chapter 1
Executive Summary

1.1 Introduction

This is a summary of the Draft Environmental Impact Report (EIR) for the Sandrini Solar Project (project) prepared pursuant to the California Environmental Quality Act (CEQA).

This EIR has been prepared by Kern County (County), the acting Lead Agency, to identify and evaluate potential environmental impacts associated with the construction and operation of the project which would include a 300-megawatt (MW) alternating current (AC) solar photovoltaic facility and necessary associated infrastructure, including up to 100 MW of energy storage and operations and maintenance (O&M) facilities. The project as proposed by EDPR CA Solar Park LLC [EDPR Renewables] (project proponent) would be located on 33 parcels across approximately 3,469.87 acres of privately owned land currently under agricultural use in the Valley Region of Kern County. Roughly 2,472.89 acres of the project site would be used to host the full proposed solar project capacity, while the approximately 1,002.18 acres remaining would be retained as a conservation area and would not be developed. The project would be supported by both a 70 kilovolt (kV) and a 230 kV overhead and/or underground electrical transmission lines originating from two on-site collector substations and terminating at its interconnection point with Pacific Gas and Electric's (PG&E) existing Wheeler Ridge Substation. The Wheeler Ridge Substation is located approximately 6 miles southeast of the central portion of the project site. Both transmission lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. The project's permanent facilities would include service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, project substations, energy storage system(s), and operations and maintenance facilities.

The Notice of Preparation for the EIR was released for public review on April 30, 2021, associated comment letters received during the public review period are included as Appendix A to this EIR. The Initial Study prepared for the project is also included in Appendix A. This EIR addresses issues identified in the Initial Study and comments received regarding the Notice of Preparation.

As required by CEQA, this EIR (1) assesses the potentially significant direct, indirect, and cumulative environmental effects of the project; (2) identifies potential feasible means of avoiding or substantially lessening significant adverse impacts; and (3) evaluates a range of reasonable alternatives to the project, including the required No Project Alternative. The County is the lead agency for the project and has the principal responsibility for preparing this EIR. Pursuant to the CEQA Guidelines, this EIR consists of an evaluation of the effects of the entire project. This EIR will be used by the County to inform public agencies, the public, and decision makers of the significant environmental effects of the project; identify ways to minimize significant effects; and describe reasonable alternatives to the project.

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

Chapter 3, *Project Description*, of this EIR includes figures and tables that depict the project location; including Figure 3-2, *Project Boundaries*, and an aerial view of the project location is provided on Figure 3-3, *Aerial Photograph*. The project area is divided into five sites (Sites 1 through 5) (see Figures 3-4A through 3-4E, *Site 1 – Site Plan* through *Site 5 – Site Plan*). Table 3-1, *Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning and Acreage*, lists project Sites 1 through 5 and includes each site's Assessor's Parcel Number (APN), acreages, existing zonings, and associated Williamson Act designations.

As described in Section 1.1, *Introduction*, the project proposes a utility scale photovoltaic (PV) solar facility with associated infrastructure on approximately 2,472.89 acres of privately-owned land in the Valley Region of Kern County. As stated above, the PV solar facility would generate a combined (up to) 300 megawatt (MW) of renewable electrical energy and up to 100 MW of energy storage facilities. The project would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge Substation. Both lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. Any overhead electrical transmission lines may be additionally supported by guy-wires. Additionally, 34.5 kV collector lines would connect the various project components to transmit energy to the larger transmission line system.

The proposed project consists of five separate sites (Sites 1 through 5), located on 33 parcels of privately owned land, totaling approximately 3,469.87 acres; however, it is anticipated that approximately 2,472.89 acres would be utilized (developed) for the construction of the solar panels and permanent facilities and the remaining 996.98 acres would be restricted to use for conservation of habitat (on-site conservation land) and could not be developed.

Implementation of the project as proposed includes the following requests:

a) Conditional Use Permits (CUPs) to allow for the construction and operation of four solar facilities with a total generating capacity of approximately 300 MW AC of renewable energy (broken down by site, below) including up to 100 MW of combined energy storage (for all sites), within the A (Exclusive Agriculture) Zone District (in Zone Maps 159, 160, and 161) pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance. Please note the total MW listed for each site represents the maximum MW that could be developed on the site; however, total MW for the entire project site would not exceed 300 MW.

- **Site 1** (up to 20 MW AC)
  - CUP No. 9, Map No. 159 for approximately 160 acres
- **Site 2** (up to 235 MW AC)
  - CUP No. 27, Map No. 160 for approximately 1,229.37 acres
- **Site 3** (up to 125 MW AC)
  - CUP No. 28, Map No. 160 for approximately 789.21 acres
- **Site 4** (up to 30 MW AC)
  - CUP No. 27, Map No. 161 for approximately 289.11 acres
- **Site 5** (Onsite conservation land for benefit of solar project)

  - CUP No. 29, Map 160 for approximately 996.98 acres

b) General Plan Amendment to the Circulation Element of the Kern County General Plan to remove future road reservations on the section and mid-section lines within the project boundaries:
   - General Plan Amendment No. 2, Map No. 159
   - General Plan Amendment No. 3, Map No. 160
   - General Plan Amendment No. 4, Map No. 161

c) Williamson Act Land Use Contract Cancellations:
   - **No. 21-01**
     - Cancellation of approximately 289.11 acres from Contract No. 28397, Book 4273, page 13
   - **No. 21-03**
     - Cancellation of approximately 427.65 acres from Contract No. 10965, Book 4373, page 24
   - **No. 21-04**
     - Cancellation of approximately 338.35 acres from Contract No. 28386, Book 4272, page 933

Power generated by the project would assist the State in achieving the Renewables Portfolio Standard under Senate Bill (SB) 350, which requires 50% of all electricity sold in the State to be generated from renewable energy sources by December 31, 2030. Power generated by the project would be sold to California investor-owned utilities, municipalities, community choice aggregations, or other purchasers in furtherance of the California Renewable Energy Portfolio Standard.

The anticipated Commercial Operation Date for the project is December 2022, and the project is expected to operate for approximately 35 years, although a longer project life expectancy could be realized by replacing and repowering certain project components. 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.

1.2.1 Entitlements Required

The anticipated approvals needed for the project include adoption of CUPs, General Plan Amendments to the Circulation Element of the Kern County General Plan, and cancellations of active Williamson Act Land Use Contracts. Construction and operation of the proposed solar energy facility may require additional local, state, and federal entitlements, as well as discretionary and ministerial actions and approvals listed below.

1.2.2 County of Kern

- Consideration and certification of Final Environmental Impact Report
- Adoption of 15091 Findings and 15093 Findings and Statement of Overriding Considerations
- Adoption of the proposed Mitigation Monitoring and Reporting Program

- Approval by the Kern County Board of Supervisors for the proposed CUPs for the project site
- Approval by the Kern County Board of Supervisors for the proposed General Plan Amendments to the Circulation Element
- Approval by the Kern County Board of Supervisors for the proposed of Williamson Act Land Use Contract Cancellations
- Approval by Kern County Board of Supervisors for Franchise Agreements for any use of public access easements for the Gen -Tie lines for the project.
- Approval by Kern County Board of Supervisors of any required vacations of public access easements.
- Kern County construction, grading and building permits
- Kern County public works encroachment permits
- Kern County Fire Safety Plan

1.2.3 Other Responsible Agency Entitlements

- U.S. Army Corps of Engineers Section 404 permit (if required)
- California Department of Fish and Wildlife Section 1600 et seq. permits (Streambed Alteration Agreements) and Section 2081 Permit (State-listed endangered species)
- Central Valley Regional Water Quality Control Board Water Quality Certification (401 Permit), Waste Discharge Requirements, and National Pollution Discharge Elimination System Construction General Permit
- California Department of Transportation ROW Encroachment Permits and Oversized Loads Permits
- California Public Utilities Commission Section 851 Permit
- California Public Utilities Commission as required Franchise Route Agreement Local Section 851 Permit
- San Joaquin Valley Air Pollution Control District Authority to Construct/Permit to Operate/Fugitive Dust Control Plan

1.3 Relationship of the Project to Other Solar Projects

The 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 energy project. There are several existing, permitted, solar energy, wind energy, and transmission projects in the region where the project site is located, as shown in *Figure 3-12***,** *Cumulative Projects* in Chapter 3, *Project Description*. There are 36 cumulative projects within a 6-mile radius of the proposed project, as listed in Table 3-4, *Cumulative Projects List*, in Chapter 3, *Project Description*. One solar project is located within 6 miles of the proposed project site (the Pastoria Solar Energy project).

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 the valley region of Kern County, specifically in proximity to I-5, SR-99, and SR-166. The project site is located primarily on flat terrain, currently used for agricultural operations and/or designated for agricultural use. The project is located across multiple U.S. Geological Survey quadrangles including the Conner, Conner SW, and Coal Oil Canyon quadrangles.

1.5.2 Surrounding Land Uses and Project Site Conditions

Existing land uses surrounding the project site consist largely of agricultural parcels sparsely occupied by farm or rural residential uses. The primary zoning classification in the 5-mile radius surrounding the project site is Zone A (Exclusive Agriculture). Rural residential buildings are located in the unincorporated community of Mettler, located approximately 8.5 miles southeast of the proposed project site.

The project site is designated as Map Code 8.1 (Intensive Agriculture), 8.1/2.3 (Intensive Agriculture/Shallow Groundwater), and 8.1/2.5 (Intensive Agriculture/Flood Hazard). The project site is zoned A (Exclusive Agriculture) (Kern County 2009). The agricultural land upon which the project would be developed is either fallow or actively planted with annual row crops. The five project sites are within an area that has historically been used for agricultural crop production, and approximately 1,403.94 acres of the approximately 3,469.87 total project acres (13 of the 33 parcels within the project site boundaries) are subject to active Williamson Act Land Use contracts. Additionally, 9 of the 33 parcels within the project site boundaries are identified on the Farmland Mapping and Monitoring Program (FMMP) as containing Important Farmland. Project parcels are located within Agricultural Preserve No. 12 and No. 13.

1.5.3 Project Objectives

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

- Support the generation of renewable energy in the State of California per the recent objectives outlined in SB 100 to implement carbon neutral and eligible renewable energy resources to supply 100 percent of the State's retail electricity sales by the year 2045. The project would supply solar photovoltaic (PV) energy that would assist the State in meeting these goals.
- Establish a large-scale solar PV and battery energy storage facility in a manner that maximizes the production of reliable electricity in an economically feasible manner. The project would also provide California Community Choice Aggregators with zero-emissions renewable energy to support their goals of providing that same clean energy to their customers.
- Use proven and established solar and energy storage technology to optimize efficiency and minimize operational risks and maintenance requirements.
- Provide revenues that help support public services within Kern County.
- Create green jobs within both Kern County and the broader State of California.
- Develop the project in an economically feasible, commercially viable, and broadly financeable manner.
- Meet all of the above-listed objectives while designing, constructing, and operating project facilities in an environmentally responsible manner consistent with County, state, and federal requirements.

1.5.4 Project Characteristics

As described in Section 1.1, *Introduction*, the project would include a 300-megawatt (MW) alternating current (AC) solar photovoltaic facility and necessary associated infrastructure, including up to 100 MW of energy storage and operations and maintenance (O&M) facilities. The combined project facilities are outlined below:

Solar Generator

The project would generate direct-current (DC) electricity through a series of solar PV modules connected to one another on ground-mounted single-axis tracking structures. Electricity would flow from the panels to solar inverters via DC collection wires. Once the DC electricity has been converted to AC electricity, the output from the solar inverters would be aggregated at two on-site collector substations where it would be stepped up to a higher voltage and then moved along generation tie (gen-tie) lines to the project's point of interconnection (POI) at PG&E's Wheeler Ridge Substation.

Battery Energy Storage

The project would include a lithium-ion battery energy storage system consisting of a number of battery storage units capable of storing DC electricity. The batteries would be physically arranged in racks that would be housed in temperature-controlled facilities referred to as the battery enclosures. These enclosures are equipped with all the necessary ancillary equipment including appropriate fire suppression systems and other electrical control units to safely operate the battery storage units.

The battery units would either be AC coupled or DC coupled with the solar project. When the battery storage is AC coupled, the storage facility is centralized at a project substation, and the solar and storage systems have independent inverters, medium voltage (MV) transformers, and MV collection circuits. When the battery storage is configured as a DC coupled system to the solar project, the batteries are distributed throughout the solar arrays and share the solar inverter, MV transformers, and MV collection circuits. Past the project collector substation, downstream use of the gen-tie and POI facilities is shared by both the solar and battery storage systems.

Security/Fencing

The facility would be secured with a 6 to 8-foot-high chain link fence along the perimeter. Vegetation would be cleared from the area underneath the arrays as necessary, and the site would be graded per the grading and drainage plan specifications that will be submitted for County review and approval. Access roads to be constructed around and between the arrays may include crushed aggregate, if necessary, to prevent damage to existing soils. The arrays would sit on piles that elevate them well above the surface to reduce the need for additional site landscaping.

Interconnection

The project's Point of Interconnection (POI) is the point at which the power generated by the project will be delivered to the electrical grid. The project will interconnect at Pacific Gas & Electric's (PG&E's) Wheeler Ridge Substation with 100 MW interconnecting at 70 kV and 200 MWs interconnecting at 230 kV. This project is currently in the California Independent System Operator (CAISO) interconnection queue and has been studied for delivery of the full 300 MWs of solar generation proposed under this Conditional Use Permit application.

Project Substations

The two proposed collector substations would be the points at which the power generated from the project would be aggregated. The main purpose of the substations is to step up the voltage of the generated power

to match the interconnection voltage through the use of a step-up transformer. In addition, the project substations would include protective relays and circuit breakers that would protect the grid from any disruption or disturbances, either external or internal to the project. Common substation equipment includes a control building, transformers, circuit breakers, meters, and overhead switches. The project substations would be secured with the use of a 6- or 8-foot-tall chain-link fence with triple-strand barbed wire. The internal grounds of the project substations would be covered in crushed aggregate.

Generation Tie Lines

The project would have two gen-tie lines at 230 kV and 70 kV on shared infrastructure that would connect the collector substations to the project's POI. The total length of the gen-tie would be up to 11 miles from the on-site collector substations to the existing PG&E Wheeler Ridge Substation. The project intends to construct the gen-tie lines within public rights-of-way (ROWs). The project is additionally exploring gen-tie routes that would utilize private land through transmission easements in order to provide alternate paths in the event that the public ROW routes are unavailable. Additionally, 12 kV collector lines would connect the various on-site project components to transmit energy to the larger transmission line system.

Site Access

Primary site access would be provided via Copus Road, Old River Road, SR-166 via I-5 and SR-99. Access to Site 1 is provided from Old River Road through Site 2. Access to Sites 2 and 3 is via Old River Road and Copus Road. Site 4 has access from Copus Road. Site 5 would not be developed (except for potential transmission lines passing through this area), and thus, would not need access.

Project Site Lighting

Motion sensitive, directional security lights would be installed to provide adequate illumination around the collector substation areas, the O&M building, each inverter-transformer station, at gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. All lighting also would conform to applicable Kern County rules and regulations for outdoor lighting.

O&M Building

Employees of the project may work out of an O&M building on site. The O&M building would have adequate parking including ADA access, parking for employees and would meet any additional parking requirements for local or State regulations. The O&M building is required to receive water service through a private domestic well and an engineered septic system. The O&M building may be co-located with the substation(s).

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 impacts 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 herein.

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

- 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
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfires

1.6.3 Less-than-Significant Impacts

Table 1-1, *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 1-1 would reduce impacts to a less-than-significant level.

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

Impact	Mitigation Measures
Aesthetics (Project)	MM 4.1.-5 through MM 4.1-7
Agriculture and Forestry Resources (Project)	No mitigation required
Air Quality (Project & Cumulative)	No mitigation required
Biological Resources (Project)	MM 4.4-1 through MM 4.4-22
Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-4
Energy (Project and Cumulative)	MM 4.3-5 and MM 4.3-7
Geology and Soils (Project and Cumulative)	MM 4.7-1 through MM 4.7-8
Greenhouse Gas Emissions (Project and Cumulative)	No mitigation required
Hazards and Hazardous Materials (Project and Cumulative)	MM 4.9-1 through MM4.9-4, and MM 4.14-1
Hydrology and Water Quality (Project and Cumulative)	MM 4.7-4, MM 4.9-2 and MM 4.10-1
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 4.13-4
Public Services (Project and Cumulative)	MM 4.14-1, through MM 4.14-5
Transportation (Project and Cumulative)	MM 4.15-1
Tribal Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-4
Utilities and Service Systems (Project and Cumulative)	MM 4.10-1 and MM 4.9-1
Wildfire (Project and Cumulative)	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
- Agricultural and Forestry Resources

Air Quality

- Biological Resources

Wildfire

Table 1-2**,** *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, 4.2, 4.3, 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 1-2 would reduce the severity of impacts to the extent feasible.

TABLE 1-2: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE SOLAR FACILITY

Resources	Project Impacts	Cumulative Impacts
Aesthetics	Implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated to reduce visual impacts that would limit vegetation removal, provide screening fencing that would reduce the visibility of perimeter project features, provide color treatment of structure, and ensure the site is kept free of debris. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open valley landscape character of the project site, impacts to visual resources would remain significant and unavoidable.	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. View impacts associated with these existing and proposed development would persist throughout the operational lifespan of projects. The project would result in significant and unavoidable impacts related to views, visual quality and visual character despite the implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7. Although implementation of mitigation measures would reduce visual impact severity, there are no feasible mitigation measures that would maintain the visual character of the area. The conversion of approximately 2,475 acres of privately owned land to a solar energy production facility is considered a significant and unavoidable cumulative impact.
Agricultural and Forestry Resources	Implementation of the project would convert Important Farmland to nonagricultural use. The project also conflicts with current zoning of agricultural use and Williamson Act Land Use contracts. A total of 1,403.94 acres are subject to Williamson Act Land Use contracts, all of which have documented petitions filed for non- renewal and cancellation. No feasible mitigation measures are available to reduce the impacts to a less than significant level, therefore, impacts related to the conversion of Important Farmland would be significant and unavoidable.	Kern County's population growth and urbanization would result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), and the proposed project's contribution to the conversion of agricultural land to non-agricultural uses would be cumulatively considerable. Additionally, the project would result in a significant impact involving the cancellation of Williamson contracts. 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 cumulatively considerable when viewed in connection with the effects of urbanization and loss of Farmland..

TABLE 1-2: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE SOLAR FACILITY

Resources	Project Impacts	Cumulative Impacts
		Notwithstanding the beneficial factors of the proposed project, which reduce project impacts, the conversion of Important Farmland to non-agricultural use and the cancellation of contracted lands, combined with other area projects would be significant and unavoidable.
Biological Resources	There would be no significant and unavoidable project impacts.	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. 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. Additionally, the installation of PV panels has the potential to cause impacts to migratory birds associated with collisions. 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	There would be no significant and unavoidable project impacts.	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.

1.6.5 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. Irreversible 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.

1.6.6 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.

1.7 Alternatives to the Project

Section 15126.6(f)(1) of the CEQA Guidelines states that "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries,… and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives."

The County selected a reasonable range of alternatives to the Project that would attain most of the basic objectives of the Project, would be feasible to implement, and would avoid or substantially lessen one or more of the significant effects of the Project. Accordingly, the following alternatives to the Project were selected:

- Alternative 1: No Project Alternative
- Alternative 2: General Plan/Specific Plan and 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

Pursuant to Section 15126.6(d) of the CEQA Guidelines, each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less than, similar to, or greater than the corresponding impacts of the proposed Project. Each alternative is also evaluated to determine whether the Project objectives would be substantially attained.

The analysis methodology uses the following process:

- Determination of environmental impact resulting from the alternative.
- Comparison of the Project's impact and the alternative's impact with determinations of the following:
  - Less: Where the alternative's impact would be clearly less adverse or more beneficial than the impact of the proposed Project
  - Similar: Where the alternative and proposed Project would have roughly equivalent impacts
  - Greater: Where the alternative's impact would be clearly more adverse or less beneficial than the proposed Project
- The comparative analysis is followed by a general discussion based on the CEQA resource topic area and a discussion of the alternative's ability to meet the Project objectives.

In several cases, the severity of the impact may be the same under an alternative as measured against the CEQA significance thresholds (e.g., both the Project and a given alternative would result in a less than significant impact). However, the actual magnitude of the impact may be slightly different, providing the basis for a conclusion of greater or lesser impacts, even though both are considered less than significant.

A detailed analysis of Project alternatives is outlined 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), agricultural resources (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.

- Wind Energy Project Alternative
- Industrial Power Plant Alternative
- Alternative Site Alternative

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: General Plan/Specific Plan and 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 1-3**,** *Summary of Development Alternatives*, on the following page provides a summary of the relative impacts and feasibility of each alternative and Table 1-4**,** *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 1-3: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 2,472.89 acres of privately owned land in the valley region of Kern County. The project would generate up to 300 MW of renewable electrical energy that would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge	N/A

TABLE 1-3: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
	Substation. Both lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. Additionally, 12 kV collector lines would connect the various project components to transmit energy to the larger transmission line system. The project also includes the installation of associated (up to) 100 MW of energy storage facilities. A portion of the project site (Site 5) would be preserved as 1,002.18 acres of on-site conservation land and would not be developed.	
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	• Required by CEQA • Avoids need for GPAs, CUPs, and Williamson Act Contract Cancellations • Avoids all significant and unavoidable impacts • Greater impacts to greenhouse gas (GHG) emissions • Less impact in all remaining environmental issue areas
Alternative 2: Agricultural Production 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.	• Avoids need for GPAs, CUPs, and Williamson Act Contract Cancellations • Similar impacts to biological 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 impacts in all remaining environmental issue areas
Alternative 3: Reduced Acreage Alternative	Construction and operation of solar facility on approximately 1,731 acres. This alternative is still expected to contain enough land to construct a solar array field capable of generating approximately 210 MW. The project site would require GPAs to the Circulation Element, issuance of CUPs, and Williamson Act Contract Cancellations.	• Similar impacts to hazards and hazardous materials, land use and planning and public services • Greater overall impacts to GHG emissions • Less impact in all remaining environmental issue areas
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 300 MW of PV solar distributed on rooftops throughout the valley region of Kern County. Electricity generated would be for on-site use only.	• Avoids need for GPAs, 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, agricultural resources, and biological resources • Similar impacts to energy, air quality and GHG emissions • Less impact in all remaining issue areas

TABLE 1-4: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production 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 (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Significant and unavoidable (project and cumulative)	Less (NI)	Less (NI)	Less (SU)	Less (NI)
Air Quality	Significant and unavoidable (project and cumulative)	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Biological Resources	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Cultural Resources	Less than significant with mitigation	Less (NI)	Less (LTS)	Less (LTS)	Less (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)	Less (LTS)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than significant	Greater (LTS)	Greater (LTS)	Less (LTS)	Similar (LTS)
Hazards and Hazardous Materials	Less than significant with mitigation	Less (NI)	Less (LTS)	Less (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)	Less (LTS)
Mineral Resources	Less than significant with mitigation	Less (NI)	Similar (LTS)	Less (LTS)	Less (NI)
Noise	Less than significant with mitigation	Less (NI)	Less (LTS)	Similar (LTS)	Less (LTS)
Public Services	Less than significant with mitigation	Less (NI)	Similar (LTS)	Similar (LTS)	Less (LTS)
Transportation	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Tribal Cultural Resources	Less than significant with mitigation	Less (NI)	Less (LTS)	Less (LTS)	Less (LTS)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfire	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Less (LTS)	Less (LTS)	Less (LTS)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	All	None	All

TABLE 1-4: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
NI = No Impact					
LTS = Less than Significant					
SU = Significant and Unavoidable					

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 project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 300 MW solar PV facility on the 3,469.87-acre site would not occur. The No Project Alternative would not require the General Plan Amendments (GPA), Conditional Use Permits (CUP), and Williamson Act Land Use Contract Cancellations for construction and operation of a 300 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.

Alternative 2: General Plan/Specific Plan and 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 8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater); and 8.1/2.5 (Intensive Agriculture/Flood Hazard). All five sites are currently located within the A (Exclusive Agriculture) or A FPS (Exclusive Agriculture, Floodplain Secondary Combining) Zone District. No solar facilities would be developed under this alternative and, therefore, no General Plan Amendments, 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 8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater); and 8.1/2.5 (Intensive Agriculture/Flood Hazard). The 8.1 (Intensive Agriculture (Min 20 Acres) 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 GPAs or 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.

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, only Site 3 and a portion of Site 2 would be developed with a solar facility with the capacity to generate up to 210 MW of renewable electric energy. Under this alternative, Site 1 (160 acres) and Site 4 (289.11 acres) would not be developed for solar energy production and would remain as undeveloped land, as it is currently used. Under Alternative 3, Site 2 acreage would be reduced to 942 acres (from the 1,229.37-aces proposed under the Project). The overall developable acreage under Alternative 3 would be 1,731-acres. Site 5 (on-site conservation land),

as proposed, would not be included in the site plan as part of Alternative 3. The gen-tie interconnection would remain unchanged. Development of Sites 2 and 3 would include construction of a substation, 100 MW energy storage facility, and associated infrastructure, as under the project. Eliminating development of Sites 1 and 4 and a portion of Site 2 from the project would reduce the project's total generation capacity from 300 MW to 210 MW, and reduce the developed area from approximately 2,472.89 acres to approximately 1,731 acres. Similar to the project, this alternative would require GPAs to the Circulation Element of the General Plan, issuance of CUPs, and Williamson Act Contract Cancellations for construction and operation of a commercial solar electrical generating facility.

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 kilowatt hours 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 2,472.89 acres of total rooftop area) may be required to attain project's capacity of 300 MW of solar PV generating capacity. Because of space or capital cost constraints, many rooftop solar PV 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 PV generation. Alternative 4 would generate 300 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 onsite by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

1.7.3 Environmentally Superior Alternative

As presented in the comparative analysis above, 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 following:

> *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 (project and cumulative), agriculture and forestry resources (project and cumulative), and biological resources (cumulative only) that would occur under the project. 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. This alternative would also result in greater impacts to land use as it would require extensive discretionary actions, such as design review, CUPs, or zone variances, depending on local jurisdictional requirements and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, this alternative would result in less impact to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, public services, transportation, 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 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 project because the project proponent lacks control and access to the sites required to develop 300 MW of distributed solar generated electricity. 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 General Plan/Specific Plan and 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 biological resources
- Impacts related to hydrology and water quality
- Impacts related to utilities and service systems
- Impacts related to public services (fire service)
- Impacts related to wildfire
- Impacts related to air quality
- Impacts to cultural resources
- Impacts related to transportation/traffic

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 1-5, *Summary of Project Impacts*, 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 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	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 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 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	**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 the following: a. The project proponent/operator shall clear debris from the project site 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 2 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	Significant and unavoidable

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs. **MM 4.1-2:** The project proponent and/or operator shall install metal fence slats or similar view-screening materials, as approved by the Kern County Planning and Natural Resources Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to a residence or parcels zoned for residential use, including E (Estate Residential), R-1 (Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), and PL (Platted Lands) zoning, unless the adjacent property is owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department) or a public or private agency that has submitted correspondence to the Kern County Planning and Natural Resources Department requesting this requirement to be waived. Should the project proponent/operator sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale. **MM 4.1-3:** Prior to the issuance of a building permit for all, or a phase of, the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan for review and approval by the Kern County Panning and Natural Resources Department that will ensure that all project facilities included in the building permit application for that particular phase, such as the operations and maintenance buildings, gen-tie line poles, and array facilities, blend in with the colors found in the natural landscape to the extent feasible. All color treatments shall result in matte or nonglossy/nonreflective finishes. **MM 4.1-4:** Wherever possible, within the proposed project boundary, natural vegetation shall remain undisturbed unless mowing is necessary for placement of 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:	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		a. In areas supporting native vegetation that would be 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 and/or allowed to re-vegetate with the existing native seed bank in the topsoil where possible to establish revegetation. Areas that contain permanent features, such as perimeter roads, maintenance roads, or under arrays, or fallow agricultural lands, shall not require revegetation. b. The plan must include the approved California native seed mix that will be used on site, a timeline for seeding the site, the details of which areas are to be revegetated, and a clear prohibition of the use of toxic rodenticides. c. Ground cover shall include native seed mix and shall be spread where earth-moving 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 architects, horticulturists, or botanists, with local knowledge as shown on a 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 3-year period following restoration activities that occur post-construction and post- decommissioning. Based on annual monitoring visits during the 3-year period, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for each of the 3 years. Should efforts to revegetate with the existing native seed bank in the topsoil prove in the second year to not be successful by 75% cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department, and an	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		additional year shall be added to the monitoring program to ensure coverage is achieved. The 3-year monitoring program is intended to ensure that the site naturally achieves native plant diversity, 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	**MM 4.1-5:** 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 demonstrate that the project is 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 4.1-6:** Prior to the issuance of building permits, the project proponent shall demonstrate that 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 4.1-7:** Prior to commencement of project operations of the solar facility, the project operator shall demonstrate that all on-site buildings use non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.	Less than significant
Impact 4.1: Cumulative Impacts	Potentially significant	**MM 4.1-1** through **MM 4.1-7**	Significant and unavoidable

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
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.	Potentially significant	No feasible mitigation is available.	Significant and unavoidable
Impact 4.2-2: The project would conflict with existing zoning for agricultural use or Williamson Act Contract.	Potentially significant	No feasible mitigation is available.	Significant and unavoidable
Impact 4.2-3: The project would not 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 required.	No impact
Impact 4.2-4: The project would not result in the loss of forestland or conversion of forest land to non-forest use.	No impact	No mitigation required.	No impact
Impact 4.2-5: The project would involve other changes in the existing environment which, due	Less than significant	No mitigation required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.			
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
Air Quality			
Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan	Less than significant. However, MM 4.3-1 through MM 4.3-9 are included to further	**MM 4.3-1:** The project shall continuously comply with the following: Construction and operation of the project shall be conducted in compliance with applicable rules and regulations set forth by the San Joaquin Valley Air Pollution Control District. Dust control measures outlined below shall be implemented where they are applicable and feasible. The list shall not be considered all-inclusive, and any other measures to reduce fugitive dust emissions not listed shall be encouraged. a. Land Preparation, Excavation and/or Demolition. The following dust control measures shall be implemented: 1. All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas. Watering shall take place a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations. 2. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), if disturbed material is easily	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		windblown, or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property. 3. All fine material transported off site shall be either sufficiently watered or securely covered to prevent excessive dust. 4. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times. 5. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust. 6. Where acceptable to the Kern County Fire Department, weed control shall be accomplished by mowing instead of disking, thereby, leaving the ground undisturbed and with a mulch covering. b. Site Construction. After clearing, grading, earth moving and/or excavating is completed within any portion of the project sites, the following dust control practices shall be implemented: 1. Once initial leveling has ceased, all temporarily open and inactive soil areas within the construction site shall be (1) seeded and watered until plant growth is evident, (2) treated with a dust palliative, or (3) watered twice daily until soil has sufficiently crusted to prevent fugitive dust emissions. 2. Dependent on specific site conditions (season and wind conditions), revegetation shall occur in those areas so planned as soon as practical after installation of the solar panels. A native seed mix of grass and flowers shall also be added to the spread topsoil to enhance regrowth. 3. All active disturbed soil areas shall be sufficiently watered at least twice daily or have dust palliatives applied to prevent excessive dust. c. Vehicular Activities. During all phases of construction, the following vehicular control measures shall be implemented: 1. Onsite vehicle speed shall be limited to 15 miles per hour. 2. All areas with vehicle traffic shall be paved, treated with dust palliatives or watered a minimum of twice daily.	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		3. Streets adjacent to the project sites shall be kept clean, and project-related accumulated silt shall be removed. 4. Access to the project sites shall be by means of an apron into the project sites from adjoining surfaced roadways. The aprons shall be surfaced or treated with dust palliatives. If operating on soils that cling to the wheels of vehicles, a grizzly, wheel washer, or other such device shall be used on the road exiting the project sites, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires. **MM 4.3-2:** Prior to issuance of any grading permit, the project proponent shall submit a Site-Specific Dust Control Plan for review and approval by the Kern County Planning and Natural Resources Department. The Site-Specific Dust Control Plan shall serve to minimize fugitive dust emissions during project construction. The Site-Specific Dust Control Plan shall take into consideration grading and construction schedule, seasonal winds, site-specific wind patterns and soil conditions to ensure adequate measures are implemented to manage fugitive dust. The Site-Specific Dust Control Plan shall: a. Identify a comprehensive grading schedule for the entire project site. When feasible, grading activities shall be minimized to those areas necessary for project access and installation of solar panels and other areas of infrastructure associated with the solar facility. b. The Site-Specific Dust Control Plan shall identify, in addition to those measures required by the air district, all measures being undertaken during construction activities and operational activities to ensure fugitive dust being blown off site is minimized. Measures may include, but are not limited to: 1. Use of water trucks as required for the expected level of winds in the area. 2. Use of dust suppressant (i.e., soil binders or mulch). 3. Pre-seeding and irrigating prior to construction to create vegetation with useful root structures. 4. Construction of dust screening in appropriate locations around the project site (i.e., fence slats or mesh screening).	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		5. A copy of the approved Site-Specific Dust Control Plan shall be kept at the on-site construction office and all measures included in the Site-Specific Dust Control Plan shall be included on all Grading Plans issued for the project by the Kern County Public Works Department. **MM 4.3-3:** Prior to issuance of any building and grading permits, the project proponent shall provide the Kern County Planning and Natural Resources Department with proof that an Indirect Source Review application has been approved by the San Joaquin Valley Air Pollution Control District. **MM 4.3-4: Valley Fever.** Prior to ground disturbance activities, the project proponent shall implement the following Valley Fever Provisions: a. Provide evidence to the Kern County Planning and Natural Resources Department that the project operator and/or construction manager has developed a "Valley Fever Training Handout", training, and schedule of sessions for education to be provided to all construction personnel. All evidence of the training session materials, handout(s) and schedule shall be submitted to the Kern County Planning and Natural Resources Department within 24 hours of the first training session. Multiple training sessions may be conducted if different work crews will come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. The training may be administered using video or other electronic media. The evidence submitted to the Kern County Planning and Natural Resources Department regarding the "Valley Fever Training Handout" and Session(s) shall include the following: 1. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session. 2. Distribution of a written flier or brochure that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever. 3. Training on methods that may help prevent Valley Fever	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		infection. 4. A demonstration to employees on how to use personal protective equipment, such as respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition of symptoms and earlier treatment of Valley Fever. Where respirators are required, the equipment shall be readily available and shall be provided to employees for use during work. Proof that the demonstration is included in the training shall be submitted to the county. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs. b. The project proponent also shall consult with the Kern County Health Services Department to develop a Valley Fever Dust Management Plan that addresses the potential presence of the Coccidioides spore and mitigates for the potential for Coccidioidomycosis (Valley Fever). Prior to issuance of permits, the project operator shall submit the Plan to the Kern County Public Health Department for review and approval. The Plan shall include a program to evaluate the potential for exposure to Valley Fever from construction activities and to identify appropriate safety procedures that shall be implemented, as needed, to minimize personnel and public exposure to potential Coccidioides spores. Measures in the Plan shall include the following: 1. Provide High-Efficiency Particulate Air filters for heavy equipment equipped with factory enclosed cabs capable of accepting the filters. Require contractors utilizing applicable heavy equipment to furnish proof of worker training on proper use of applicable heavy equipment cabs, such as turning on air conditioning prior to using the equipment. 2. Provide communication methods, such as two-way radios, for use in enclosed cabs. 3. Require National Institute for Occupational Safety and Health-approved half-face respirators equipped with minimum N-95 protection factor for use during worker collocation with surface disturbance activities, as required per the hazard assessment process.	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		4. Cause employees to be medically evaluated, fit-tested, and properly trained on the use of the respirators, and implement a full respiratory protection program in accordance with the applicable California Occupational Safety and Health Administration Respiratory Protection Standard (8 California Code of Regulations Section 5144). 5. Provide separate, clean eating areas with hand-washing facilities. 6. Install equipment inspection stations at each construction equipment access/egress point. Examine construction vehicles and equipment for excess soil material and clean, as necessary, before equipment is moved off site. 7. Train workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor. 8. Work with a medical professional to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever. 9. Work with a medical professional, in consultation with the County Health Services Department, to develop an educational handout for on-site workers and surrounding residents within 3 miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for exposure is available. Prior to construction permit issuance, this handout shall have been created by the project operator and reviewed by the project operator and reviewed by the County. No less than 30 days prior to any work commencing, this handout shall be mailed to all existing residences within 3 miles of the project boundaries. 10. When possible, position workers upwind or crosswind when digging a trench or performing other soil-disturbing tasks. 11. Prohibit smoking at the worksite outside of designated smoking areas; designated smoking areas will be equipped with	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		handwashing facilities. 12. Post warnings on-site and consider limiting access to visitors, especially those without adequate training and respiratory protection. **MM 4.3-5:** The project shall continuously comply with the following: The project proponent and/or its contractors shall implement the following measures during construction of the project: a. All equipment shall be maintained in accordance with the manufacture's specifications. b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for extended periods of time. c. Construction equipment shall operate longer than eight cumulative hours per day. d. Electric equipment shall be used whenever possible in lieu of diesel- or gasoline-powered equipment. e. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOX emissions. f. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines. g. Tier 3 engines shall be used on all equipment when available. **MM 4.3-6:** The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes: a. Any unpaved access roads used by employees and/or for deliveries shall be paved or effectively stabilized using soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than the California Air Resources Board-approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation. b. The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		cause visible dust plumes. c. Traffic speeds on unpaved roads shall be limited to no more than 15 miles per hour. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s). **MM 4.3-7:** The project proponent shall continuously comply with the following measures during operation of the project to control emissions from the on-site dedicated equipment (equipment that would remain on-site each day): a. All onsite off-road equipment and on-road vehicles for operation/maintenance shall be new equipment that meets the recent the California Air Resources Board engine emission standards or alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, as appropriate. b. All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized. c. All equipment engines shall be maintained in good operating condition and in tune per manufacturers' specification. **MM 4.3-8:** Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading), including decommissioning, the project proponent shall provide written notice to the public through mailing a notice to all parcels within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include the construction schedule, a telephone number and email address where complaints and questions can be registered. Additionally, a minimum of one sign, legible at a distance of 50 feet, shall also be posted at the construction sites or adjacent to the nearest public access to the main construction entrances throughout construction activities which include the construction schedule (updated as needed) and a telephone number where complaints can be registered. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department. **MM 4.3-9:** Prior to the issuance of any grading or building permit, the project proponent shall establish a "construction coordinator" and submit	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		written documentation which includes their phone number, email address and mailing address. The construction coordinator shall be responsible for the following: a. 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. b. Ensuring all appropriate construction notices have been made available to the public and that all appropriate construction signs have been installed. c. Maintaining an ongoing up-to-date log of all construction related complaints (i.e., blowing dust, inability to access parcels, etc.) during project construction activities. The log shall include the nature of the complaint and the measures that were undertaken to address the concerns. Upon request, the construction coordinator shall provide the log to the Planning and Natural Resources Department no later than three business days from request.	
Impact 4.3-2: The project would violate an air quality standard or contribute substantially to an existing or projected air quality violation	Less than significant	No mitigation required.	Less than significant
Impact 4.3-3: The project would expose sensitive receptors to substantial pollutant concentrations	Potentially significant	Implementation of **MM 4.3-1** through **MM 4.3-9** would be required. **MM 4.3-10:** 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	Significant and unavoidable

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		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 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 ational Institute for Occupational Safety and Health-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 4.3-11**: 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 4.3-12**: 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	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		submitted to the Kern County Planning and Natural Resources Department for review and approval.	
Impact 4.3-4: The project would create objectionable emissions (such as those leading to odors) adversely affecting a substantial number of people	Less than significant.	No mitigation required.	Less than significant
Impact 4.3: Cumulative Impacts	Potentially significant	**MM 4.3-1** through **MM 4.3-12**	Significant and unavoidable
Biological Resources			
Impact 4.4-1a: The proposed project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	Potentially significant	**MM 4.4-1:** If special-status plant species are found during floristic surveys or have been previously identified, then Ecologically Sensitive Area (ESA) fencing should be established at a 50-foot radius around these individuals to ensure that they are not destroyed during project construction activities. Pursuant to Section 1913(c) of the California Fish and Game Code, if project activities cannot avoid direct impacts to special-status plants, CDFW shall be notified and provided the opportunity to salvage any of these plants that would be affected. The CDFW may enter into agreement with the project proponent to retain a qualified entity for the relocation of sensitive plants to an approved location. Any salvage would be undertaken in accordance with a salvage plan to be developed in consultation with CDFW. The plan would include methods for transplanting and watering (if appropriate), success criteria for salvaged plants, monitoring the health and survivorship of salvaged plants during at least 5 years following salvage, and contingency measures if plant survivorship requirements are not satisfied. **MM 4.4-2:** Invasive species have the potential to out-compete native special-status plant species. Consequently, the introduction and spread of invasive and non-native plant species should be avoided and controlled wherever possible during construction and operations within the project footprint. This may be achieved through the following measures: • Clean vehicles and equipment before they enter construction areas. • Apply chemical deterrents or implementing appropriate revegetation	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		actions to disturbed areas to prevent growth of invasive species. • Implement an annual weed and invasive species control program within the project footprint and areas temporarily impacted during construction. **MM 4.4-3:** To reduce any indirect impacts to special-status plants that may be in the project footprint, best management practices (BMPs) will be implemented to control dust pollution, prevent discharge of potentially harmful chemicals, and prevent changes in hydrology. BMPs may include the installation of erosion and sedimentation control devices, applying water to control dust, placing drip pans under equipment when not in use, refueling in designated areas, and containing concrete washout properly, among other practices. **MM 4.4-4: Protocol-level Surveys and/or Avoidance of Blunt-nosed Leopard Lizard.** The area of Valley Sink Scrub habitat located in Zone Map #160 contains suitable habitat, including burrows, for BNLL. If project activities in this area cannot be avoided (i.e., solar arrays or power pole locations) and if small mammal burrows cannot be avoided by ground-disturbing activities (e.g. excavation or grading) with a 50-foot buffer per MM 4.4-5, qualified biologists shall conduct protocol-level surveys for blunt-nosed leopard lizard at disturbance locations within the 50-foot burrow buffer according to the *Approved Blunt-nosed Leopard Lizard Survey Methodology*, as revised as of October 2019 (Appendix D1), or using another survey protocol approved by USFWS and CDFW. Project activity outside the specified 50-foot buffer may proceed while surveys are conducted. Overland travel not requiring ground disturbance may be permitted within the 50-foot buffer under the direct supervision of a qualified biologist. If no blunt-nosed leopard lizard is observed during the survey no further action is required. If blunt-nosed leopard lizards are observed during the survey, then the measures below should be implemented: • Mitigation Measure MM 4.4-5 should be implemented to avoid all blunt-nosed leopard lizards that might be present in underground burrows. This would only be required in areas where blunt-nosed leopard lizards were determined to be present.	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• All construction activities occurring during the active BNLL season in areas where BNLL were determined to be present shall require that on-site biological monitors be present at each site where activities are occurring within these areas. If a BNLL is present within 50-feet of the construction activities, the monitor shall halt all activities until the BNLL leaves the 50-feet area on its own accord. • Consultation with the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) will occur and an incidental take permit will be sought from USFWS if take of BNLL habitat (as defined by the federal Endangered Species Act) cannot be avoided. An incidental take permit would ensure that any impacted habitat is offset with mitigation habitat at a ratio to be determined in consultation with USFWS. Consultation with CDFW will ensure that no direct take of individual BNLL occurs given the protection afforded to this species as a Fully Protected Species under Fish and Game Code 5050. **MM 4.4-5: Avoidance of Small Mammal Burrows.** Tipton kangaroo rat, Tulare grasshopper mouse, blunt-nosed leopard lizard, and San Joaquin antelope squirrel depend on small mammal burrows for critical life functions. The Valley Sink Scrub habitat located in Zone Map #160 contains small mammal burrows. Any construction of solar panel fields within the project footprint, and temporary access roads and tower locations for the gen-tie routes in non-cultivated habitat types will be sited to avoid small mammal and other fossorial burrows. A pre-construction survey to search the proposed gen-tie project alignment for listed species and suitable burrows will be conducted in suitable habitat prior to ground-disturbing activities associated with project activities. Surveys for burrow locations that will inform the location of temporary access roads and gen-tie towers may be conducted earlier in the project design cycle, but the final survey for burrows will occur no more than 30 days before the beginning of the gen-tie line construction to ensure an up-to-date understanding of burrowing locations prior to actual siting. Existing survey information on the location of burrows and a 50-foot buffer around the existing burrows will be used to avoid burrows when planning the placement of solar panel stations, access routes and placement of gen-tie	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		tower facilities. If small mammal burrows cannot be avoided by ground disturbing activity (e.g. excavation or grading) with a 50 –foot buffer, then verification trapping or other method as developed in consultation with CDFW and USFWS will be conducted in those areas of the buffer that cannot be avoided. If it is determined that the Tipton kangaroo rat or San Joaquin antelope squirrel is absent, then no further measures are warranted. If present, the following measures should be implemented: • The loss of occupied habitat should be compensated at a an agreed upon ratio with the appropriate agencies but no less than a 1:1 ratio to ensure no net loss of habitat. • Consultations with the USFWS and CDFW will occur and Incidental Take Permits acquired if take of listed species cannot be avoided. • If it is determined that the Tulare grasshopper mouse is present, a biological monitor should be on site to relocate any animals that might not leave the work site on their own volition. **MM 4.4-6: Avoidance of Burrows for Burrowing Owl, American Badger, and SJKF.** Within 14 days prior to the start of project ground-disturbing activities, a pre-activity survey with a 500-foot buffer where land access is permitted should be conducted by a qualified biologist knowledgeable in the identification of these species and approved by the CDFW. Surveys need not be conducted for all areas at one time; they may be phased so that surveys occur within 14 days of the portion of the project site that will be disturbed. If dens/burrows that could support any of these species are discovered during the pre-activity surveys conducted under MM 4.4-15, the avoidance buffers outlined below should be established. No work would occur within these buffers unless the biologist approves and monitors the activity. *Burrowing Owl (active burrows)* • Non-breeding season: September 1 – January 31 – 160 feet • Breeding season: February 1 – August 31 – 250 feet If burrowing owl are found within these recommended buffers and avoidance is not possible, burrow exclusion would be conducted by	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. Replacement of occupied burrows with artificial burrows shall occur at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) to mitigate for evicting burrowing and the loss of burrows. Burrowing owl may attempt to colonize or re-colonize an area that will be impacted; thus, ongoing surveillance shall occur at excluded burrows at a rate that is sufficient to detect burrowing owl if they return. *American Badger/SJKF* • Potential or Atypical den – 50 feet • Known den – 100 feet • Natal or pupping den – 500 feet, unless otherwise specified by CDFW. **MM 4.4-7**: **Burrowing Owl, American Badger, and SJKF Detection.** Within 14 days of the start of project ground-disturbing activities, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of these species. If, during construction activities, a live burrowing owl, American badger, or SJKF is encountered, all construction activity should stop in the affected area until the animal leaves of its own volition. The special-status species should be avoided by construction activities and construction workers and allowed to leave the project site without harassment. **MM 4.4-8: Burrowing Owl, American Badger, and SJKF Avoidance.** A qualified biologist should remain on-call throughout the construction phase in the event that a burrowing owl, American badger, or SJKF occurs on the site during construction. If one of these species occurs on-site, the biologist should be contacted immediately to determine whether biological monitoring or the implementation of avoidance buffers may be warranted. **MM 4.4-9: Standard Avoidance and Minimization Measures for the protection of SJKF.** The following avoidance and minimization measures should be implemented during all phases of the project to reduce the potential for impact from the project. They are modified from	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered SJKF Prior to or During Ground Disturbance* (USFWS 2011, Appendix E). a. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction or project site. b. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds shall not exceed 20 miles per hour (mph) within the project site. c. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored on the project site shall be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted and USFWS and CDFW shall be consulted. d. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS and CDFW have been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		e. No pets, such as dogs or cats, shall be permitted on the project sites to prevent harassment, mortality of kit foxes, or destruction of dens. f. Use of anti-coagulant rodenticides and herbicides in project sites shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes. g. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative shall be identified during the employee education program and their name and telephone number shall be provided to the USFWS. h. The Sacramento Fish and Wildlife Office of USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to a SJKF during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact can be reached at (559) 243-4014 and R4CESA@wildlifeca.gov. i. All sightings of the SJKF shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the Service at the address below. j. Any project-related information required by the USFWS or questions concerning the above conditions, or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Endangered Species Division, 2800 Cottage Way, Suite W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600. **MM 4.4-10: Pre-activity Surveys for Nesting Birds.** If project construction activities will be initiated during the nesting season (February 1 to September 15), a pre-activity nesting bird survey should be conducted within 14 days prior to the start of construction. The surveys should encompass the project site and accessible or land visible from accessible areas within a 250-foot buffer for songbirds and a 500-foot buffer for raptors. The surveys may be phased with construction of the project. The surveys shall also evaluate presence/absence of tricolored blackbird nesting colonies in proximity to project activities and to evaluate whether there is a potential for project-related impacts. If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. Surveys for burrowing owl will follow CDFW protocol. If active nests are found during the survey or at any time during construction of the project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest, or if breeding attempts have otherwise been unsuccessful. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress. If an active tricolored blackbird nesting colony is found during preconstruction surveys, a no-disturbance buffer will be established in accordance with CDFW's "Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agriculture Fields in 2015" (Appendix D1). This buffer will depend on the nature of the activity being conducted near the colony. For disturbances that are short in duration a 60-foot buffer would be appropriate. More intensive construction activities may require a buffer of up to 300 feet at the	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		discretion of the biological monitor. The buffer will remain in place until the breeding season has ended or until a qualified biologist has determined that nesting has ceased, the birds have fledged, and are no longer reliant upon the colony or parental care for survival. **MM 4.4-11: Pre-activity Surveys for Swainson's Hawk Nests.** If project construction activities must occur during the Swainson's hawk nesting season (February 15 to August 31), pre-construction activity surveys should be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee (Appendix D1). Timing and the number of phases of surveys can be adjusted based on the timing of the construction schedule. The surveys maybe phased to coincide with active construction areas plus a 0.5-mile buffer of those areas. **MM 4.4-12: Swainson's Hawk Nest Avoidance.** No mature trees that could be used by nesting Swainson's hawk will be removed during construction of the project. If an active Swainson's hawk nest is discovered at any time within 0.5 miles of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this project. Based on this assessment, the biologist will determine if construction activities can proceed, and the level of nest monitoring required. Construction activities should not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist should have the authority to stop work if it is determined that project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		season. **MM 4.4-13: Pre-activity Surveys for Least Bell's Vireo.** If project construction activities must occur during the least Bell's vireo breeding season (April 1 to July 31), protocol least Bell's vireo surveys should be conducted by a qualified biologist in accordance with the Least Bell's Vireo Survey Guidelines (Appendix D1). The survey would consist of eight surveys conducted between April 10 and July 31, although construction may continue while surveys are conducted unless and until a least Bell's vireo nest is discovered, at which point MM 4.4-14 would be implemented. The surveys would be conducted within suitable habitat within the project footprint and survey buffer plus suitable habitat that is legally accessible within 0.25 mile, as per the guidelines. If no least Bell's vireo nests are found, no further action is required. **MM 4.4-14: Least Bell's Vireo Nest Avoidance.** If nesting least Bell's vireos are observed at any time within 0.25 miles of active construction, work will not occur within 0.25 miles of the nest until a qualified biologist has determined that the young have fledged. **MM 4.4-15: Preconstruction Clearance Survey.** Within 14 days prior to the start of ground disturbance activities, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of all special-status plant and wildlife species on native habitat subject to disturbance. All suitable burrows that could support BNLL, Tipton kangaroo rat, Tulare grasshopper mouse, or other special-status wildlife species will be avoided during construction in accordance with MM 4.4-4 and MM 4.4-5. Consultation with the USFWS and CDFW may be required if listed or fully protected species are detected during the survey. **MM 4.4-16: California Glossy Snake and San Joaquin Coachwhip Avoidance and Minimization.** If the species are present within the work area they will be allowed to leave on their own. If they do not leave, the qualified biologist may capture and relocate them to nearby suitable habitat at an appropriate distance to ensure the animal will be safe. **MM 4.4-17: Worker Environmental Awareness Training.** Prior to the initiation of construction activities, all construction personnel should attend a Worker Environmental Awareness Training program developed	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		by a qualified biologist. Any personnel associated with construction that did not attend the initial training shall be trained by the authorized biologist prior to working on the project site. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training program prior to starting work on the project and on an annual basis. The Program shall be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s). The program should include information on the life histories of special-status species with potential to occur on the project, their legal status, course of action should these species be encountered on-site, and avoidance and minimization measures to protect these species. It shall include the components described below: a. Information on the life history and identification of special-status species that may occur or that may be affected by project activities. The program shall also discuss the legal protection status of each such species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements. b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education program has been completed shall be kept on file at the construction site. 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 Worker Environmental Awareness Training and Education program, and signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department. d. A copy of the training transcript, training video or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with as necessary. e. A sticker shall be placed on hard hats indicating that the worker has	

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Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		completed the Worker Environmental Awareness Training and Education program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker. f. The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from project activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service. **MM 4.4-18: On-Site Biological Monitoring.** During construction of portions of the project (APNs 295-130-57, 295-100-19, 295-130-48, 295-130-51, 295-130-21, 295-130-26, 295-130-27, 295-120-15, and 295-130-81), including the gen-tie line that occur within native habitat (Valley Sink Scrub), a biological monitor with halt-work authority will be present to observe activities. During construction, the qualified biologist will have the authority to order a halt to construction activities in the following instances: (1) a biological monitor observes activities that may result in mortality or harm to a listed or fully protected species (BNLL) or (2) a biological monitor observes any of the mitigation and avoidance measures are not being implemented properly. Construction will resume when either the listed species moves out of harm's way on its own or the avoidance and minimization measures that are not being implemented properly are rectified. **MM 4.4-19: Bird Flight Diverters.** If guy wires are required for any project infrastructure, such use will be minimized to the extent possible. Any guy wires would be installed with bird flight diverters at no less than 15-foot spacing to reduce the potential for collision from flying birds.	
Impact 4.4-2: Implementation of the proposed project could have a substantial adverse effect on any	Potentially Significant	**MM 4.4-20 Restoration of Temporary Impacts in Sensitive Plant Communities.** Valley Sink Scrub should be avoided to the maximum extent possible. Any Valley Sink Scrub habitat that is permanently	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS.		impacted shall be mitigated by preserving compensation land at a ratio of 2:1 acres.	
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.	Potentially significant	**MM 4.4-21: Wetland and Waters Delineation** 1. Prior to issuance of any grading or building permit, the project proponent/operator shall conduct a preliminary assessment of the identify aquatic features on the project site to determine which of these features could potentially be under the jurisdiction of the USACE, CDFW, and/or RWQCB. The report will include a discussion of the methods and results, including maps, of the assessment of all potentially jurisdictional aquatic features at the project site and will be submitted to the County. 2. If the proponent determines that the project could directly or indirectly impact aquatic resources potentially under the jurisdiction of the USACE, CDFW, and/or RWQCB, a formal aquatic resource delineation of these areas will be performed pursuant to accepted agency delineation protocols by a qualified professional to determine the extent of agency jurisdiction and the extent of potential impacts to agency jurisdiction. 3. If it is determined that aquatic features under agency jurisdiction will be impacted, the appropriate permits and authorizations from the regulating agencies shall be obtained prior to disturbance to jurisdictional features. The permit/authorization process typically includes the submittal of a detailed jurisdictional delineation report, measures to avoid, minimize, and/or mitigate for impacts, and required applications to each resource agency and consultations with agency staff. 4. As part of the permit/authorization application process, compensatory mitigation may be required by the agencies to offset the loss of aquatic resources. If so, and as part of the permit application process, a qualified professional shall draft a mitigation and monitoring plan	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		to address implementation and monitoring requirements expected to be included under the permit to ensure that the project would result in no net loss of habitat functions and values. The plan shall contain, at a minimum, mitigation goals and objectives, mitigation location, a discussion of actions to be implemented to mitigate the impact, monitoring methods and performance criteria, extent of monitoring to be conducted, actions to be taken in the event that the mitigation is not successful, and reporting requirements. The plan shall be approved by the appropriate regulating agencies and compensatory mitigation shall take place either on site or at an appropriate off-site location. 5. Any material/spoils generated from project activities containing hazardous materials will be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. 6. Equipment containing hazardous liquid materials will be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and at least 50 feet outside the delineated boundary of jurisdictional water features. 7. Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned, and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.	
Impact 4.4-4: The project could 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	**MM 4.4-22: Fence Design and Site Permeability.** Fences installed on the perimeter of the solar project site will be designed to allow for passage of SJKF, their prey and other listed wildlife, while impeding the passage of larger predators of kit foxes, such as coyotes and larger domestic dogs. Perimeter fencing shall consist of wire fencing, with openings from 3 to 7 inches square and will be installed inverted, with the larger openings at the bottom to allow SJKF to pass through. Chain link fencing may also be used if it is installed with a 4-6-inch gap from the bottom of the fencing material shall be knuckled back to from a smooth edge. Alternate designs may also be constructed with prior written	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		approval from CDFW and USFWS. In addition, low vegetation will be maintained within the solar arrays so that wildlife such as SJK can utilize the project area during operation.	
Impact 4.4-5: The project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	No impact	No mitigation required.	No impact
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.	No impact	No mitigation required	No impact
Impact 4.4: Cumulative Impacts	Potentially significant	Implementation of **MM 4.4-1** through **MM 4.4-22** would be required.	Significant and unavoidable
Cultural Resources			
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.	Potentially significant	**MM 4.5-1:** The project proponent/operator shall retain a lead archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards within its Standards and Guidelines, to carry out all mitigation measures related to archaeological and unique historical resources. The contact information for the 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 that the following employee training provisions occur 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 conduct cultural resources sensitivity training for all personnel working on the project site. A Cultural Resources Sensitivity Training Guide, approved by the lead archaeologist, shall be provided to all personnel. The training guide may be presented in	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		video form. A copy of the proposed training materials shall be provided to the Kern County Planning and Natural Resources Department prior to the issuance of any grading or building permit. 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 and/or Native American monitor(s) for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. b. The project proponent/operator shall ensure all employees or on-site workers who have not participated in earlier cultural resources sensitivity trainings shall meet the provisions specified above. c. A copy of the Cultural Resources Sensitivity Training Guide/materials shall be kept on site and be available for all personnel to review and be familiar with, as necessary. It is the responsibility of the lead archaeologist to ensure that all employees receive appropriate training before working on site. **MM 4.5-2:** Prior to the issuance of any grading or building permit, the project operator shall submit to the Kern County Planning and Natural Resources Department a Cultural Resources Treatment Plan. The plan shall do the following: a. Provide an overview of best management practices to be used during construction activities to ensure protection of cultural resources. b. Outline the process for evaluation of any unanticipated cultural discoveries during project construction activities. **MM 4.5-3:** 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	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		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 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. **MM 4.5-4:** During implementation of the project, in the event 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 discovery. Signs shall be posted that establish it as an Environmentally Sensitive Area and all entrance to the area shall be avoided until the discovery is assessed by the Lead Archaeologist, as well as the Native American monitor. The Lead Archaeologist, in consultation with the Native American monitor, shall evaluate the significance of the	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		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 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 California Environmental Quality Act Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist in consultation with the Native American monitor shall develop additional treatment measures in consultation with the 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 CEQA Guidelines Section 15064.5.	Potentially significant	**MM 4.5-1** through **MM 4.5-3**	Less than significant
Impact 4.5-3: The project would disturb human remains, including those interred outside of formal cemeteries.	Potentially significant	**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 Section 15064.5(e)(1) of the California Environmental Quality Act Guidelines. If the County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Health and Safety Code Section 7050.5(c) and California Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a most likely descendent for the remains, per PRC 5097.98. Per PRC 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 (7100 et seq.) directing identification of the next-of-kin shall apply.	
Impact 4.5: Cumulative Impacts	Potentially significant	**MM 4.5-1** through **MM 4.5-4**	Less than significant
Energy			
Impact 4.6-1: The project would result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation	Potentially significant	Implementation of Mitigation Measures **MM 4.3-5** and **MM 4.3-7** would be required.	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 required.	Less than significant
Impact 4.6: Cumulative Impacts	Potentially significant	**MM 4.3-5** and **MM 4.3-7**	Less than significant
Geology and Soils			
Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse	Potentially significant	**MM 4.7-1:** The project proponent/operator shall not place habitable structures, defined as structures that are occupied 2,000 hours per year or more, within 500 feet of the mapped ground fractures unless a fault	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
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.		investigation is completed by a California licensed Geotechnical Engineer or Engineering Geologist or is otherwise determined by the Geotechnical Engineer or Engineering Geologist to be safe, consistent with Special Publication 42 by the California Geological Survey. **MM 4.7-2:** If located within 500 feet of mapped active fault traces, critical equipment and underground utilities/transmission lines should be designed to accommodate ground displacements of at least two feet, consistent with current Kern County Building Code requirements and approval from Kern County Engineering Department.	
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.	Potentially significant	**MM 4.7-3:** Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full 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. The project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California-registered professional engineer. a. The 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 ground shaking 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;	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		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. c. 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 or mitigated. d. The final structural design shall be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements shall 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.	Potentially significant	Implementation of **MM 4.7-3** 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 required	Less than significant
Impact 4.7-5: The project would	Potentially significant	Implementation of **MM 4.7-3** would be required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
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.		**MM 4.7-4:** The construction contractor shall incorporate Best Management Practices consistent with the National Pollutant Discharge Elimination System General Construction Permit Program for all construction projects that would not retain all stormwater onsite and the Kern County Grading Code. The project proponent shall prepare an Erosion and Sedimentation Control Plan as well as a Stormwater Pollution Prevention Plan. The Stormwater Pollution Prevention Plan shall be prepared by a Qualified Stormwater Pollution Prevention Plan Developer and submitted for review and approval by the applicable Regional Water Quality Control Board. The Stormwater Pollution Prevention Plan Best Management Practices shall include, but not be limited to, the following: • Scheduling to avoid ground disturbance during rain events to the maximum extent possible • Preservation of existing vegetation and topography to the maximum extent practicable • Stabilized construction entrances and exits • Erosion control (including all pertinent temporary erosion control practices as specified in Chapter 17.28.140 of the Kern County Grading Code), such as mulching, temporary drains and cullies, sandbag barrier, geotextiles and mats, silt fences, brush or rock filters, earth dikes, straw bale barriers, and sediment traps • Sediment control • Waste management • Good housekeeping • Post-construction site stabilization Prior to initial construction mobilization, preconstruction surveys shall be performed, and sediment and erosion controls shall be installed in accordance with the approved Stormwater Pollution Prevention Plan. A copy of the approved Stormwater Pollution Prevention Plan shall be submitted to the Kern County Planning and Natural Resources Department.	
Impact 4.7-6: The project would be located on a geologic unit or	Potentially significant	Implementation of **MM 4.7-3** would be required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
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.			
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 **MM 4.7-3** 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.	Potentially significant	**MM 4.7-5:** Prior to the issuance of any building permit for the operation and maintenance facility, theproject operator shall obtain all required permits and approvals from Kern County Environmental Health Services Division and shall implement all required conditions regarding the design and siting of the septic system.	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	**MM 4.7-6:** The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the requirements set forth in the Society for Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010), to carry out all mitigation measures related to paleontological resources. The qualified paleontologist and the lead archeologist may be the same individual. Prior to the start of any ground disturbing activities, the qualified paleontologist shall prepare 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	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		training guide may be presented in video form. a. Paleontological Resources Awareness Training may be conducted in conjunction with the archaeological resources training required by Mitigation Measure MM 4.5-1 presented in Section 4.5, Cultural Resources. b. 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 fossil collecting or intentional disturbance of paleontological resources. c. The project operator shall ensure all new on-site construction personnel who have not participated in earlier Paleontological Resources Awareness Trainings shall meet the provisions specified above. d. The Paleontological Resources Awareness Training Guides shall be kept available for all personnel to review and be familiar with, as necessary. **MM 4.7-7:** During construction, the qualified paleontologist or designated monitor shall monitor all ground-disturbing activities (with the exception of vibratory or hydraulic installation of tracking or mounting structures and foundations or supports) that occurs at a depth of 15 feet or deeper below ground surface. a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the Kern County Planning and Natural Resources Department and shall be based on a review of geologic maps and grading plans. i. During the course of monitoring, if the paleontologist can demonstrate, based on observations of subsurface conditions, that the level of monitoring could be reduced, the paleontologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances, as warranted.	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		b. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary. c. Following completion of monitoring, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources on site. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, discuss recovery and curation efforts, and provide the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to an appropriate repository, such as the Natural History Museum of Los Angeles County. **MM 4.7-8**: 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. Accompanying notes, maps, and photographs shall also be filed at the repository.	
Impact 4.7: Cumulative Impacts	Potentially significant	**MM 4.7-1** through **MM 4.7-8**	Less than significant
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	No mitigation required.	Less than significant
Impact 4.8-2: The project would	Less than significant	No mitigation required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases			
Impact 4.8: Cumulative Impacts	Less than significant	No mitigation required.	Less than significant
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 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. A Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Construction, Operation and 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 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 and decommissioning. A site plan showing the recycling storage area for construction shall be submitted prior to the issuance of any grading or building permit for the site. **MM 4.9-2:** During the life of the project, including decommissioning, the project operator shall prepare and maintain a Hazardous Materials Business Plan, 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	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		information to the California Environmental Reporting System at http://cers.calepa.ca.gov/ for review and acceptance by the Kern County Environmental Health Services Division/Hazardous Materials Section. a. The Hazardous Materials Business Plan shall: 1. Delineate hazardous material and hazardous waste storage areas; 2. Describe proper handling, storage, transport, and disposal techniques, including which routes will be used to transport hazardous materials; 3. Describe methods to be used to avoid spills and minimize impacts in the event of a spill; 4. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; 5. Establish public and agency notification procedures for spills and other emergencies including fires; and 6. Include procedures to avoid or minimize dust from existing residual pesticide and herbicide use that may be present on the site. b. The project proponent/operator shall provide the Hazardous Materials Business Plan to all contractors working on the project and shall ensure that one copy is available at the project site at all times. c. A copy of the approved Hazardous Materials Business Plan shall be submitted to the Kern County Planning and Natural Resources Department prior to issuance of a building permit.	
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	Implementation of **MM 4.9-1** and **MM 4.9-2** would be required. **MM 4.9-3**: During project construction, operation, and decommissioning, the project proponent/operator shall continuously comply with the following: • The construction contractor or project personnel shall use herbicides that are recommended by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service. Personnel applying herbicides shall have all appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		• Herbicides shall be mixed and applied in conformance with the manufacturer's directions. • 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. • 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. • 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. • A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the Kern County Planning and Natural Resources Department.	
Impact 4.9-3: 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.	Potentially significant	**MM 4.9-4:** The project proponent shall continuously comply with the following during construction activities that disturb subsurface materials: 1. In the event that suspect contamination is discovered during project construction, work shall immediately halt within a designated buffer area surrounding the point of discovery. A qualified hazardous materials professional shall be contacted and brought to the project site to determine the extent of the buffer area and to collect samples. 2. All suspect materials shall be isolated, covered, and protected until laboratory analysis of collected soil samples informs whether materials can be reused onsite or require offsite disposal as directed by the qualified hazardous materials professional with oversight from the Kern County Environmental Health Services Division. 3. Offsite disposal shall be done in accordance with Caltrans transportation requirements and any requirements set by the receiving disposal facility.	Less than significant
Impact 4.9-4: The project would	Less than significant	No mitigation required	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
be located within the adopted Kern County Airport Land Use Compatibility Plan and would result in a safety hazard for people residing or working in the project area.			
Impact 4.9-5: The project would be located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.	Less than significant	No mitigation required	Less than significant
Impact 4.9-6: The project would impair implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan.	Less than significant	No mitigation required	Less than significant
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	Implementation of Mitigation Measure **MM 4.14-1** would be required.	Less than significant
Impact 4.9: Cumulative Impacts	Potentially significant	MM 4.9-1 through **MM 4.9-4, & MM 4.14-1**	Less than significant
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	Implementation of **MM 4.7-4** and **MM 4.9-1** would be required. **MM 4.10-1:** Prior to the issuance of a grading permit, the project proponent/operator shall complete a final hydrologic study, grading plan and drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study and plans shall include the	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		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. An assessment of the 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 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 on-site or off-site. d. A specification that the final design of the solar arrays shall include 1 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 (1) foot or as required by Kern County's Floodplain Ordinance. e. The grading 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 with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Potentially significant	Implementation of **MM 4.10-1** would be required.	Less than significant
Impact 4.10-3: The project	Potentially significant	Implementation of **MM 4.7-4** and **MM 4.10-1** would be required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
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.			
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 **MM 4.10-1** 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 **MM 4.7-4** and **MM 4.10-1** would be required.	Less than significant
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 **MM 4.10-1** would be required.	Less than significant
Impact 4.10-7: The project	Potentially significant	Implementation of **MM 4.9-1**, **MM 4.9-2** and **MM 4.10-1** would be	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
would result in a flood hazard, tsunami, or seiche zone, that would risk release of pollutants due to project inundation.		required.	
Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than significant	No mitigation required	Less than significant
Impact 4.10: Cumulative Impacts	Potentially significant	**MM 4.7-4, MM 4.9-2 & MM 4.10-1**	Less than significant
Land Use and Planning			
Impact 4.11-1: The project would cause a significant environmental impact due to physically dividing an established community.	Less than significant	No mitigation 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 required	Less than significant
Impact 4.11: Cumulative impacts	Potentially significant	**MM 4.11-1: Decommissioning Plan.** Prior to issuance of any building permit, the project proponent shall provide a Decommission Plan for review and approval by the Kern County Engineering, Surveying, and Permit Services Department. The Decommission Plan would be carried out by the proponent or a County-contracted consulting firm(s) at a cost to be borne by the project proponent. 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	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		fugitive dust on the remaining undeveloped land. The repurposing, resale and salvage value of all personal property, including the solar panels and support structures, and real property interests, if any, held by the project proponent on the date of original valuation and as adjusted annually by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s), as described below, 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 deconstruction of the site as identified in 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 deconstruction 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 30 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed every 5 years by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate that adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance. Once deconstruction has occurred, financial assurance will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project operator. Should the solar field not be in operational condition for a consecutive period of 24 months due to reasons within the sole and reasonable control of the project owner, the site shall be deemed abandoned and shall be removed within 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 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 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 after notice to the owner and a written determination by the Kern County Planning and Natural Resources Director be permitted to remain in place for more than 48 months from the date, the solar facility was first deemed abandoned by written determination by the Kern County Planning and Natural Resources Director.	
Mineral Resources			
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 residents of the State.	Potentially significant	**MM 4.12-1:** Prior to issuance of any grading or building permit, excluding the generation tie line in the conservation area, the applicant shall provide the following documentation regarding the mineral rights holders who also have right of surface access and drilling areas: a. Written authorization, in a separate document outside any agreement, from the mineral right holder that they agree to solar panels being placed on the specific parcel with the mineral rights. The letter shall include the specific Assessor's Parcel Number of the property and name of the mineral rights holders, and any agreements for size and	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		location of drilling areas. b. 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. c. 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.	
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.	Potentially significant	Implementation of Mitigation Measure **MM 4.12-1** would be required.	Less than significant
Impact 4.12: Cumulative impacts	Potentially significant	**MM 4.12-1**	Less than significant
Noise			
Impact 4.13-1: The project could result in generation of a substantial temporary 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	**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. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible. b. 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. c. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County of Kern's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9 p.m. and 6 a.m. on weekdays, and between 9 p.m. and 8 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. 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. Onsite 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:** The construction contractor shall establish a Noise Disturbance Coordinator for the project during construction. The Noise Disturbance Coordinator shall be responsible for responding to any	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		complaints about construction noise. The Noise Disturbance Coordinator shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground disturbing activities. **MM 4.13-3:** Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), including decommissioning, the project proponent/operator shall provide written notice to the public through mailing a notice, which shall include: a. The mailing notice shall be to all residences within 1,000 feet of the project site, 15 days or less prior to construction activities. The notices shall include the construction schedule and a telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator. b. A minimum of one sign, legible at a distance of 50 feet, shall be posted at the construction site, or adjacent to the nearest public access to the main construction entrance, throughout construction activities that shall provide the construction schedule (updated as needed) and a telephone number where noise complaints can be registered with the noise disturbance coordinator. c. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department. **MM 4.13-4** Adequate noise shielding shall be provided to the project's onsite transformers and inverters such that the existing ambient noise level at the nearest offsite residential structure would not be exceeded by more than 5 dBA. The project proponent/operator shall submit photographic evidence of this technology and clearly demonstrate on a site plan where adequate noise shielding will be located, if necessary. No shielding shall be required if the increase in ambient noise level is 5 dBA or less.	
Impact 4.13-2: The project could	Less than significant	No mitigation required	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
result in generation of a substantial 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.			
Impact 4.13- 3: The project could generate excessive ground borne vibration or ground borne noise levels.	Less than significant	No mitigation required	Less than significant
Impact 4.13- 4: The Project would not be located within the Kern County Airport Land Use Compatibility Plan, and would not expose people residing or working in the project area to excessive noise levels.	Less than significant	No mitigation required	Less than significant
Impact 4.13: Cumulative Impacts	Potentially significant	**MM 4.13-1** through **MM 4.13-4**	Less than significant
Public Services			
Impact 4.14-1: The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios,	Potentially significant	**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 the following: a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
response times or other performance objectives for any public services.		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 shall have their factory-installed (type) mufflers maintained 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. **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 1. Any building permit application 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. 2. The map for either the total project or a phase shall calculate the 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 or on-site conservation lands.	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		3. Formula: Net Acreage = (2)A minus the sum of [(2)B + (2)C + (2)D]. 4. Temporary storage areas or non-permanent commercial coaches or cargo containers for construction or operations are not eligible for inclusion under (2)B or (2)C, above. 5. All areas of buildings, accessory improvements, and easement used in the calculations shall be shown on the submitted Phase Map. 6. 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 CIC 1. 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. 2. Payments shall be made to the Planning and Natural Resources Department for transfer directly to the Kern County Administrative Office Fiscal Division and labeled "Cumulative Impact Charge (CIC)," with the project name and phase number. 3. 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 CIC. **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 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 Kern County Administrative Office Fiscal Division and labeled	

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		"Supplemental Cumulative Impact Charge (SCIC)" with the project name and phase number. **MM 4.14-4:** The project proponent/operator shall work with the County of Kern (County) to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include 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 the 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 the 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 that will be working on the project site to hire at least 50% 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.	
Impact 4.14: Cumulative Impacts	Potentially significant	**MM 4.14-1** through **MM 4.14-5**	Less than significant
Transportation			
Impact 4.15-1: The project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian	Less than significant	No mitigation required	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
facilities.			
Impact 4.15-2: The project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).	Less than significant	No mitigation 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).	Potentially significant	**MM 4.15-1:** Prior to the issuance of construction or building permits, the project proponent/operator shall do the following: 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 address, at a minimum, the following issues: 1. Timing of deliveries of heavy equipment and building materials. 2. Directing construction traffic with a flag person. 3. Placing temporary signing, lighting, and traffic control devices if required, including appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic. 4. Ensuring access for emergency vehicles to the project site. 5. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections. 6. Maintaining access to adjacent property. 7. Specifying construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hours. b. Obtain all necessary encroachment permits for the work within road rights-of-way and use of oversized/overweight vehicles that will use County of Kern-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	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		Works Department-Development Review, and the California Department of Transportation. c. Enter into a secured agreement with the County of 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 the 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 County and non-County-maintained roads that demonstrably result from construction activities. The project proponent/operator shall submit a pre-construction 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 and inspection report to the County, in a format specified by the County. The County, in consultation with the project proponent/operator's engineer, shall determine project responsibility for the damage and the extent of remediation required, if any.	
Impact 4.15-4: The project would result in inadequate emergency access.	Potentially significant	Implementation of Mitigation Measure **MM 4.15-1** would be required.	Less than significant
Impact 4.15: Cumulative Impacts	Potentially significant	**MM 4.15-1**	Less than significant
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,	Potentially significant	Implement Mitigation Measures **MM 4.5-1** through **MM 4.5-4** would be required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
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).			
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	Potentially significant	Implement Mitigation Measures **MM 4.5-1** through **MM 4.5-4** would be required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
significance of the resource to a California Native American tribe.			
Impact 4.16: Cumulative Impacts	Potentially significant	**MM 4.5-1** through **MM 4.5-4**	Less than significant
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**, **MM 4.10-3** and **MM 4.7-4** would be required.	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 required	Less than significant
Impact 4.17-3: The project would result in a determination by the wastewater 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 required	Less than significant
Impact 4.17: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures **MM 4.10-1**, **MM 4.10-3** and **MM 4.9-1** would be required.	Less than significant

TABLE 1-5: SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
Wildfire			
Impact 4.18-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.	Potentially significant	Implementation of Mitigation Measures **MM 4.14-1** would be required.	Less than significant
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.	Potentially significant	Implementation of Mitigation Measures **MM 4.14-1** would be required.	Less than significant
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 Measures **MM 4.14-1** would be required.	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 instability, or drainage changes.	Potentially significant	Implementation of Mitigation Measures **MM 4.7-3** and **MM 4.7-4** would be required	Less than significant
Impact 4.18: Cumulative Impacts	Potentially significant	**MM 4.7-3, MM 4.7-4** and **MM 4.14-1**	Significant and unavoidable

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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 Sandrini Solar Project (project).

The project site is located on approximately 3,469.87 acres of privately owned land and would generate a combined 300-megawatt alternating-current solar photovoltaic facility and necessary associated infrastructure, including up to 100 megawatts of battery energy storage, located in the valley region of unincorporated Kern County.

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 as follows:

- 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

As described in Chapter 1, *Executive Summary*, 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 Kern County Board of Supervisors, who may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify the following:

- 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.
- 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 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 EIR adequately describes the environmental impacts of the project.
- Preferred choice among alternatives.
- Determine whether the recommended mitigation measures should be adopted or modified.
- 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 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 artificial conditions.
- *Impacts* analyzed under CEQA must be related to a physical change. Impacts are either of the following:
  - Direct or primary impacts that would be caused by the project and would occur at the same time and place.
  - 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 through any of the following:
  - 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.
  - 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:
  - Individual impacts may be changed 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 less than significant.
- *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 implementation of mitigation measures.

2.4 Decision-Making Process

CEQA requires lead agencies, in this case Kern County and the County Planning Commission, 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:

- **Initial Study/Notice of Preparation (IS/NOP).** CEQA requires a 30-day review period following release of an IS/NOP; however, the County of Kern (County) prepared and circulated an IS/NOP

for 60 days to responsible, trustee, and local agencies for review and comment beginning on April 30, 2021, and ending on June 1, 2021.

- **Draft EIR Preparation/Notice of Completion.** A Draft EIR is prepared, incorporating public and agency responses to the IS/NOP 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 EIRs. Per CEQA Guidelines Section 15105, the County will provide for a 45-day public review period on the Draft EIR. The 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 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 County 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 County 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 Initial Study/Notice of Preparation

Pursuant to CEQA Guidelines Section 15082, as amended, the Kern County Planning and Natural Resources Department circulated an IS/NOP to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning April 30, 2021, and ending on June 1, 2021. The IS/NOP was also posted in the Kern County Clerk's office for 60 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 IS/NOP 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 IS/NOP and all comment letters are provided in Appendix A of this EIR.

2.4.2 Scoping Meeting

Pursuant to CEQA Guidelines Section 15082(c)(1), 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 the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. The County hosted a scoping meeting on May 21, 2021, at 1:30 p.m. In compliance with the Governor's Executive Order, the California Department of Public Health's guidelines on gatherings regarding COVID-19, and the Kern County Local Emergency Declaration, the scoping meeting required by the CEQA Guidelines was conducted online. Instructions for accessing the virtual scoping meeting were available 3 days before the virtual scoping meeting on the Kern County Planning and Natural Resources website at https://kernplanning.com.

Notice of Preparation/Initial Study and Scoping Meeting Results

No verbal comments were received at the May 21, 2021, scoping meeting. Specific environmental concerns raised in written comments received during the IS/NOP public review period are discussed below. The IS/NOP and all comments received are included in Appendix A.

Notice of Preparation Written Comments

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

TABLE 2-1: SUMMARY OF INITIAL STUDY/ NOTICE OF PREPARATION COMMENTS

Commenter/Date	Summary of Comment
State Agencies	
Native American Heritage Commission May 13, 2021	Description of project compliance requirements with Senate Bill 18 and Assembly Bill 52: EIR should evaluate whether the project will have an adverse impact on historical resources within the project area, contact appropriate regional archaeological information center for a records search, prepare an archaeological inventory survey (if required), contact the Native American Heritage Commission, and include mitigation measures for inadvertent discoveries of cultural resources.
California Department of Transportation (Caltrans) May 26, 2021	The comment letter requests the preparation and submittal of a project-specific Traffic Impact Analysis and states requirements for which that report should be performed.
California Department of Fish and Wildlife June 2, 2021	California Department of Fish and Wildlife comment letter as a responsible agency. Comments identify various potential impacts to biological resources, specifically, special-status animal species. The comment letter provides specific mitigation measures for the preparation of the project CEQA document.
Regional Agencies	
Pacific Gas & Electric (PG&E) May 5, 2021	The comment letter describes potential plan review requirements and fees by the agency and regulations for construction near PG&E gas and electric facilities.
Southern California Gas Company (SoCalGas) May 10, 2021	General requirements for potential construction work performed near the SoCalGas high-pressure lines.
San Joaquin Valley Air Pollution Control District (SJVAPCD) June 7, 2021	Description of recommendations, regulations, and analysis procedures regarding criteria pollutant emissions, emissions-reduction agreement, health risk screening/assessment, ambient air quality, cumulative impacts, and other SJVAPCD rules and regulations.
Local Agencies	
Kern County Public Works May 3, 2021	States that there is the potential for the project to lead to increases in stormwater and that the project site is subject to flooding. Conditions of approval are recommended to manage these risks.
Kern County Fire Department May 11, 2021	Description of the Fire Department's plan review process, recommended battery specifications, and fee calculation requirements.
Kern County Superintendent to Schools May 17, 2021	Comment letter states that the project will have no impact on Lakeside Union, General Shafter, or Kern High School District as long as applicable school impact facility fees are collected.

TABLE 2-1: SUMMARY OF INITIAL STUDY/ NOTICE OF PREPARATION COMMENTS

Commenter/Date	Summary of Comment
Kern County Public Health Services May 18, 2021	Request for implementation of planning conditions of approval regarding environmental reporting, water supply and sewage disposal, and treatment of abandoned wells (if present on project site).
Kern Audubon Society May 28, 2021	Request that protected animal species are evaluated through a project-specific biological site assessment. The letter clarifies that the assessment should be performed during appropriate seasons and by a qualified biologist.
Individual Parties	
Mark Papasergia May 10, 2021	Solicitation of the individual's professional services for the project.

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 CEQA Guidelines Section 15087. 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:

1. **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:

2. **Kern County Library/Beale**
   Local History Room
   701 Truxtun Avenue
   Bakersfield, CA 93301

3. **Kern County Library**
   Frazier Park Branch
   3732 Park Drive
   Frazier Park, CA 93501

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 above. 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 address potentially significant environmental effects on the following resources:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources

- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Noise
- Public Services
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

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

- Population and Housing
- Recreation

This facility is expected to employ up to 11 full-time employees responsible for maintenance and other activities related to ongoing facility operations. Due to the small number of full-time employees, it is anticipated that the local housing stock would be adequate to accommodate operations personnel should they relocate to the area, without requiring the need for the construction of new housing, 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.

Additionally, no comments were received during circulation of the IS/NOP indicating that additional impacts would need to be addressed. No further discussion of these topics 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

TABLE 2-2: REQUIRED EIR CONTENTS

Requirement (CEQA Guidelines Section)	Location in EIR
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 chapters:

- 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 Draft EIR.
- Chapter 8, *Organizations and Persons Consulted*, lists the organizations and persons contacted during preparation of this EIR.
- Chapter 9, *List of 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, 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 CEQA Guidelines Sections 15381 and 15386, 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 those listed below.

2.6.1 Federal Agencies

- United States Fish and Wildlife Service
- United States Environmental Protection Agency
- Federal Aviation Administration
- United States Army Corps of Engineers

2.6.2 State Agencies

- California Governor's Office of Planning and Research
- California Energy Commission
- California Air Resources Board
- California Public Utilities Commission
- California Department of Fish and Wildlife
- Central Valley Regional Water Quality Control Board
- California Department of Transportation (Caltrans), District 6
- California Native American Heritage Commission

2.6.3 Local Agencies

- San Joaquin Valley Air Pollution Control District
- Kern Council of Governments

2.6.4 Kern County

- Planning and Natural Resources Department
- Public Works Department
- Public Health Services Department, Environmental Health Division
- Kern County Fire Department
- County Sheriff's Department
- Other additional permits or approvals that may be required for the project

2.7 Incorporation by Reference

In accordance with CEQA Guidelines Section 15150 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 (County of Kern 2009).

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 Title are as follows:

- 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
- 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, and was adopted on August 16, 2018. The 2018 RTP is a 20-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 (Kern Council of Governments 2018). California's Sustainable Communities and Climate Protection Act, or Senate Bill 375, calls for the Kern Council of Governments RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas emissions from passenger vehicles and light-duty trucks by 5% per capita by 2020 and 10% per capita by 2035 as compared to 2005. In addition, Senate Bill 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation, ensuring consistency between low-income housing need and transportation planning. The 2022 update to the RTP/SCS is currently in progress.

2.8 Sources

This EIR is dependent on 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 upon request 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) was prepared by Kern County (County), the acting lead agency, to identify and evaluate potential environmental impacts associated with construction and operation of the Sandrini Solar Project (project). The project would include a 300-megawatt (MW) alternating-current (AC) solar photovoltaic (PV) facility and necessary associated infrastructure, including up to 100 MW of energy storage and operations and maintenance (O&M) facilities. The project as proposed by EDPR CA Solar Park LLC [EDPR Renewables] (project proponent) would be located on 33 parcels across approximately 3,469.87 acres of privately owned land currently under agricultural use in the valley region of Kern County. Approximately 2,472.89 acres of the project site would be developed as a PV solar facility, including battery energy storage and associated infrastructure, while the approximately 996.98 acres remaining would be restricted to use for conservation of habitat (proposed conservation area) and could not be developed.

The project would be supported by both a 70-kilovolt (kV) and a 230 kV overhead and/or underground electrical transmission lines originating from two on-site collector substations and terminating at its interconnection point with Pacific Gas & Electric's (PG&E) existing Wheeler Ridge Substation. The Wheeler Ridge Substation is located approximately 6 miles southeast of the central portion of the project site. Both transmission lines would convey electricity back and forth between various phases of the project and the larger electrical grid. The project's permanent facilities would include service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, project substations, energy storage system(s), and an O&M building.

3.2 Project Location

The project site is located within Township 32S, Range 26E, Section 25; Township 32S, Range 27E, Section 30; Township 32S, Range 27E, Section 29; Township 32S, Range 27E, Section 28; Township 32S, Range 27E, Section 32; Township 32S, Range 27E, Section 33; Township 32S, Range 27E, Section 34; and Township 32S, Range 28E, Section 31; and Township 32S, Range 27E, Section 34, Mount Diablo Base and Meridian (see Figure 3-1, *Site Vicinity*). The project site is located approximately 1.5 miles from the unincorporated community of Kern Lake and approximately 7 miles from the unincorporated community of Mettler. The project site is nestled between hilly and mountainous terrain to the south and to the east.

The project boundaries are shown in Figure 3-2, *Project Boundaries*. An aerial view of the project location is provided in Figure 3-3, *Aerial Photograph*. The project is divided into five sites (Sites 1 through 5) (see Figure 3-4, *Site Plan*, and Figure 3-4A, *Site 1 – Site Plan*, through Figure 3-4E, *Site 5 – Site Plan*). Table 3-1, *Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning and Acreage*, lists project Sites 1 through 5, and includes each site's Assessor's Parcel Number, acreages, existing zonings, and associated Williamson Act designations.

Site 1 consists of approximately 160 acres and is the western-most site of the five project sites. Access to Site 1 is provided from Old River Road through Site 2. Site 2 covers approximately 1,229.37 acres and is located immediately east of Site 1. Site 3 covers approximately 789.21 acres and is located immediately

south of Site 2. Access to Sites 2 and 3 is via Old River Road and Copus Road. Site 4 is a stand-alone site (i.e., not geographically connected to Sites 1, 2, 3, or 5). Site 4 covers approximately 289.11 acres and is located east of Sites 1, 2, and 3, between Interstate 5 and State Route (SR) 99, and has access from Copus Road. Site 5 would not be developed (except for potential transmission lines passing through this area) and is composed of approximately 1,002.18 acres north of Site 2 and Site 3; a portion of Site 5 is located immediately south of Site 3.

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

Site	APN	General Plan Map Code Designation	Existing Zoning	Williamson Act Status	Acres
Site1 (CUP 9, Map 159	295-050-17	8.1, 8.1/2.5	A	Contract Expired 12-31-19	160.00
				Subtotal	*160.00*
Site2 (Cup 27, Map 160)	295-130-02	8.1	A	Contract Expired 12-31-19	167.00
	295-130-04	8.1/2.5	A	Nonrenewal	40.82
	295-130-05	8.1/2.5	A	NA	26.89
	295-130-07	8.1/2.5	A	NA	13.29
	295-130-13	8.1/2.5	A	Nonrenewal	40.46
	295-130-52	8.1/2.3	A	NA	1.08
	295-130-53	8.1/2.3	A	NA	8.54
	295-130-54	8.1/2.5	A	NA	29.28
	295-130-57*	8.1	A	Nonrenewal	209.65
	295-130-62	8.1	A	Nonrenewal	218.00
	295-130-71	8.1/2.3	A	NA	159.89
	295-140-01	8.1/2.5	A	NA	216.90
	295-140-02	8.1/2.5	A	NA	10.19
	295-140-03	8.1/2.5	A	NA	8.63
	295-140-04	8.1/2.5	A	NA	17.27
	295-140-06	8.1/2.5	A	NA	30.56
	295-140-07	8.1/2.5	A	NA	20.61
	295-140-08	8.1/2.5	A	NA	10.31
				Subtotal	*1,229.37*
Site3 (CUP 28, Map 160	295-130-32	8.1/2.3	A	Nonrenewal	318.76
	295-130-64	8.1/2.3	A	Nonrenewal	19.59
	295-130-81	8.1/2.3	A	Contract Expired 12-31-19	170.14
	295-130-83*	8.1/2.3	A	Contract Expired 12-31-19	131.98
	295-130-86	8.1/2.3	A	Contract Expired 12-31-19	148.53
				Subtotal	*789.21*

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

Site	APN	General Plan Map Code Designation	Existing Zoning	Williamson Act Status	Acres
Site4 (CUP 27, Map 161)	445-062-34	8.1, 8.1/2.3	A	Nonrenewal	289.11
				Subtotal	*289.11*
Site5 (CUP 29, Map 160)	295-100-19	8.1	A	Nonrenewal	56.04
	295-120-15	8.1/2.3	A	Nonrenewal	86.72
	295-130-21	8.1/2.3	A	Nonrenewal	158.38
	295-130-26	8.1/2.3	A	Nonrenewal	85.31
	295-130-27	8.1/2.3	A	NA	85.47
	295-130-32*	8.1/2.3	A	Nonrenewal	16.13
	295-130-48^	8.1/2.3	A	Nonrenewal	193.63
	295-130-51^	8.1/2.3	A	Nonrenewal	96.67
	295-130-57*^	8.1	A	Nonrenewal	191.35
	295-130-83*	8.1/2.3	A	Contract Expired 12-31-19	14.49
	295-130-85	8.1/2.3	A	Contract Expired 12-31-19	17.99
				Subtotal	*1,002.18*
				TOTAL	**3,469.87**
Developed Acreage (Sites 1-4)					2,472.89
Generation Tie (Gen-Tie) Line Acres in Site 5					5.20
Conservation Acreage in Site 5					996.98

NOTES: APN = Assessor's Parcel Number; CUP = Conditional Use Permit; 8.1 = Intensive Agriculture (Min. 20 Acre Parcel Size); 8.1/2.3 = Intensive Agriculture/Shallow Groundwater; and 8.1/2.5 = Intensive Agriculture/Flood Hazard; A = Exclusive Agriculture

***** = Portion of parcel used in Site 5 (proposed conservation area)/gen-tie line impacts removed where applicable

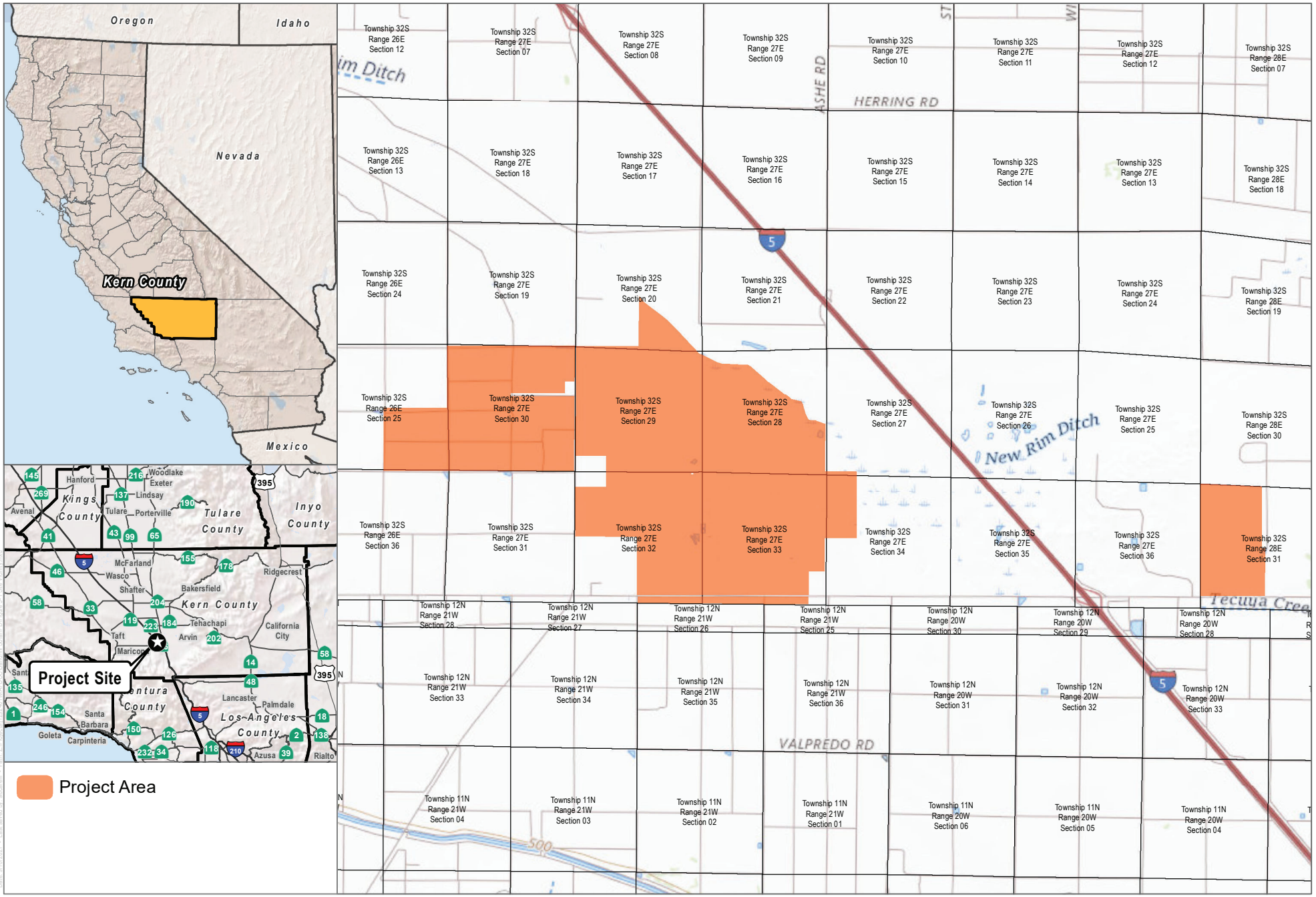
^ = Acreage shown pending lot line adjustment #42-21/gen-tie line impacts removed from mitigation total (2 acres from 295-130-48, 2.2 acres from 295-130-41, 1 acre from 295-130-57)

3.3 Project Objectives

The proposed project would provide the State of California with a renewable energy source that would assist the State of California in complying with the Renewables Portfolio Standard (RPS) under Senate Bill 350 (2015), which requires that 50% of all electricity sold in the state to be generated from renewable energy sources by December 31, 2030. Senate Bill 100 was approved in September 2018 and would increase the Renewables Portfolio Standard to a 100% goal by 2045. As further required by the California Environmental Quality Act (CEQA) Guidelines, the specific objectives of the project are provided below:

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

- Support the generation of renewable energy in the State of California per the recent objectives outlined in Senate Bill 100 to implement carbon neutral and eligible renewable energy resources to supply 100% of the state's retail electricity sales by the year 2045. The project would supply solar photovoltaic (PV) energy that would assist the state in meeting these goals.
- Establish a large-scale solar PV and battery energy storage facility in a manner that maximizes the production of reliable electricity in an economically feasible manner. The project would also provide California Community Choice Aggregators with zero-emissions renewable energy to support their goals of providing that same clean energy to their customers.
- Use proven and established solar and energy storage technology to optimize efficiency and minimize operational risks and maintenance requirements.
- Provide revenues that help support public services within Kern County.
- Create green jobs within both Kern County and the broader State of California.
- Develop the project in an economically feasible, commercially viable, and broadly financeable manner.
- Meet all of the above-listed objectives while designing, constructing, and operating project facilities in an environmentally responsible manner consistent with County, state, and federal requirements.



SOURCE: USGS National Map 2021
Conner, Conner SW & Coal Oil Canyon Quadrangles

DUDEK

0 2,750 5,500 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-1
Site Vicinity
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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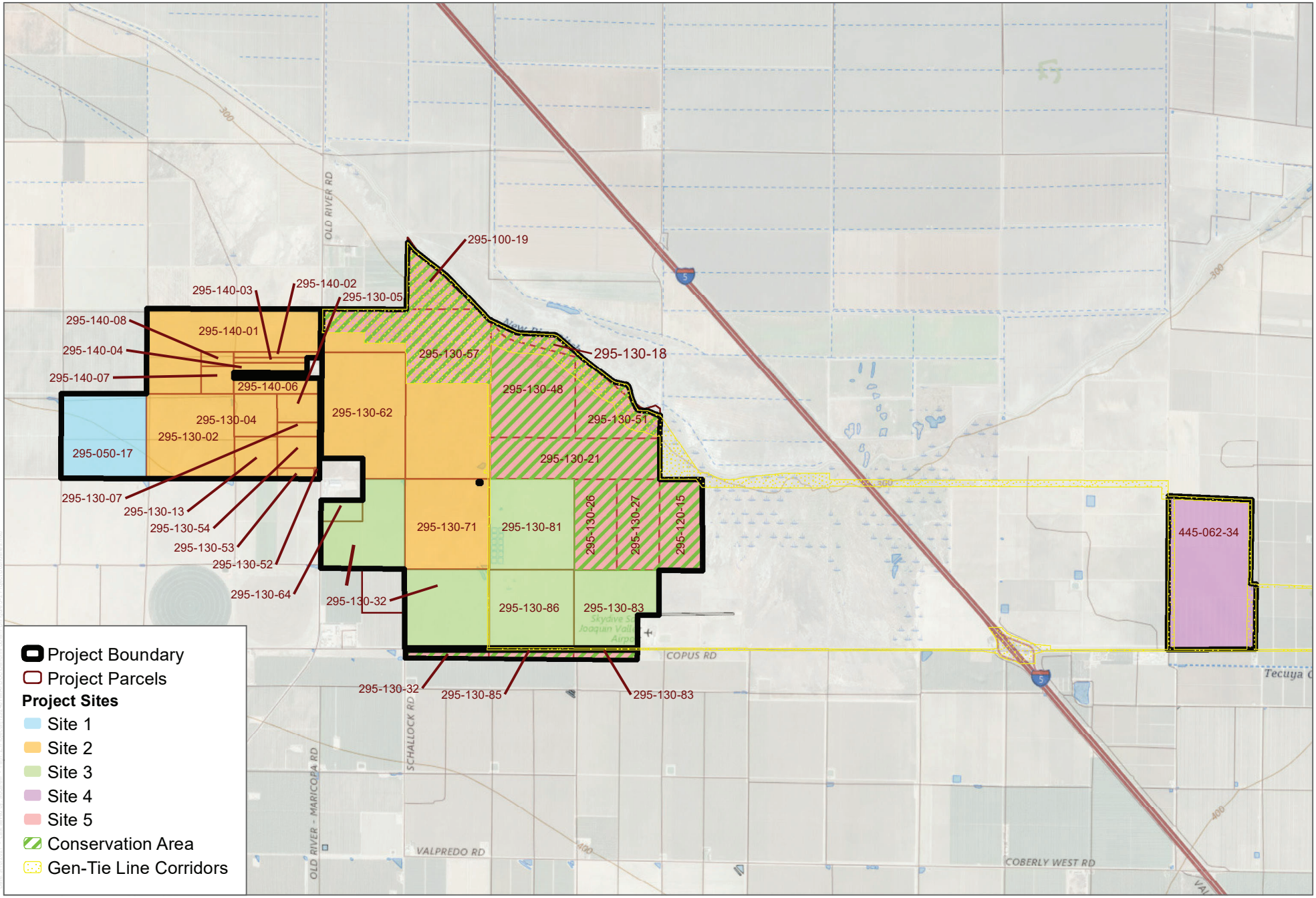

SOURCE: USGS National Map 2021; Maxar 2020; Kern County 2020

DUDEK

0 2,000 4,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-2
Project Boundaries
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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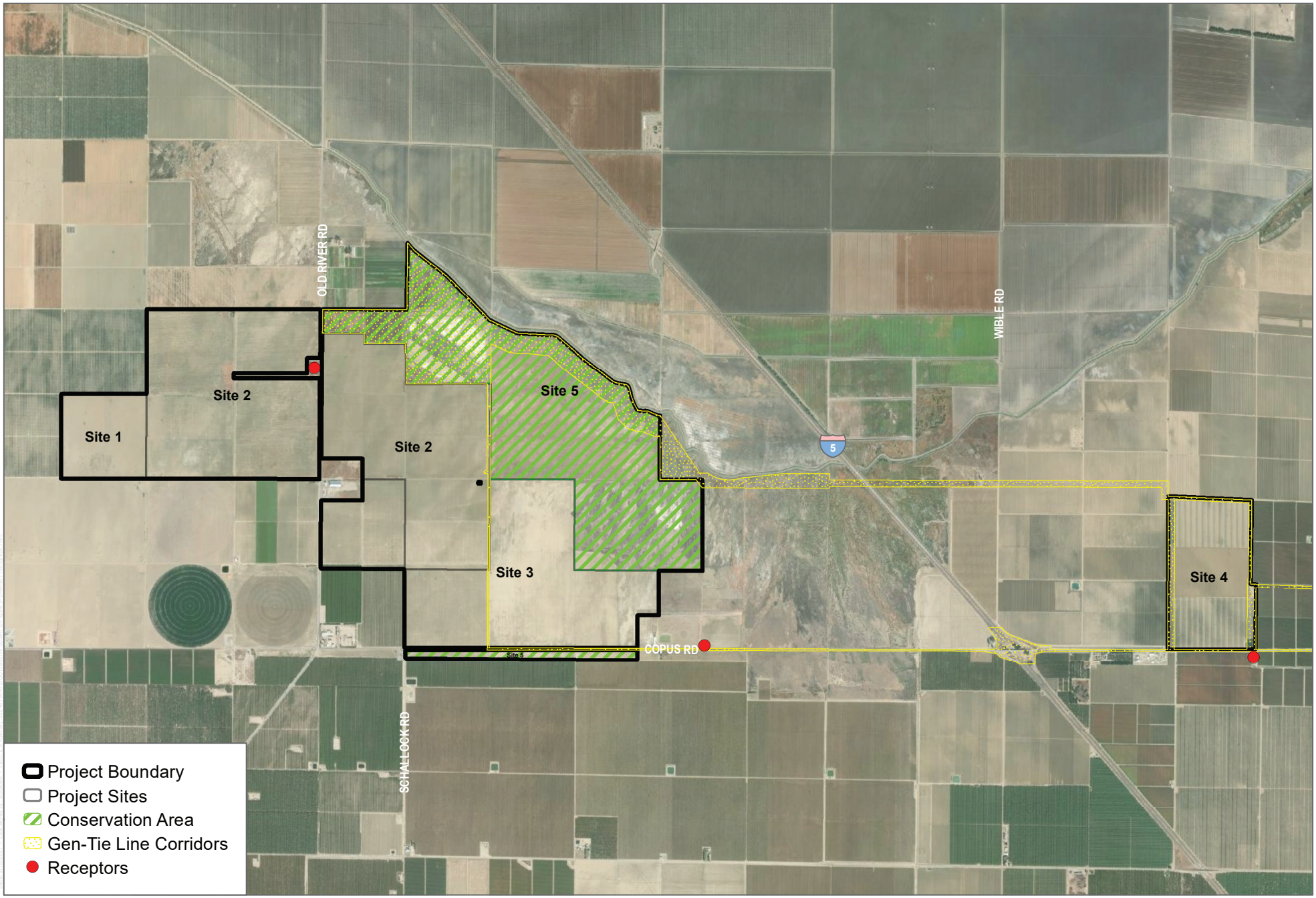

SOURCE: Maxar 2020

DUDEK

0 2,000 4,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-3
Aerial Photograph
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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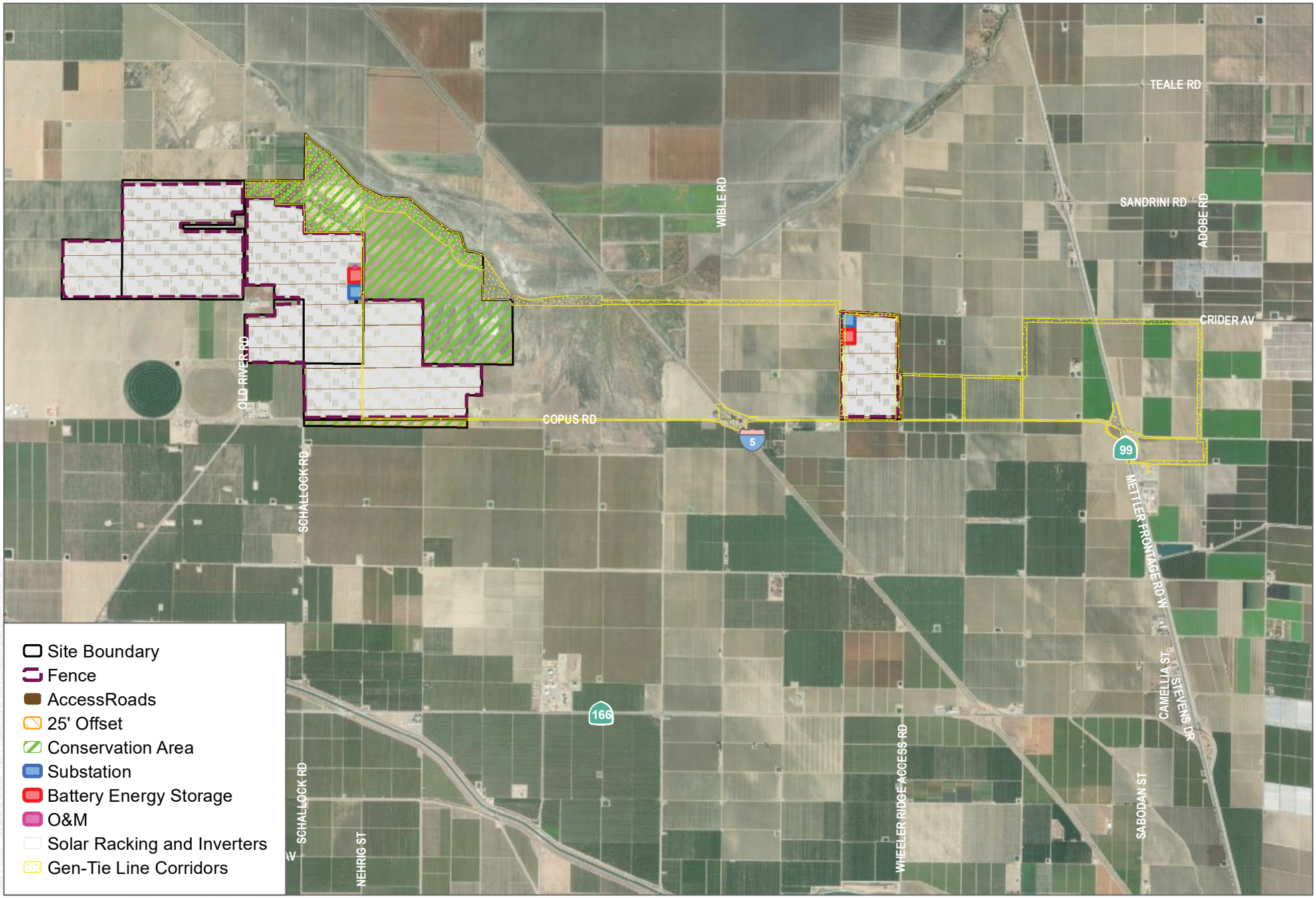

SOURCE: Maxar 2020

DUDEK

0 2,875 5,750 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-4
Site - Site Plan
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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SOURCE: Maxar 2020

DUDEK

0 240 480 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-4A

Site 1 - Site Plan

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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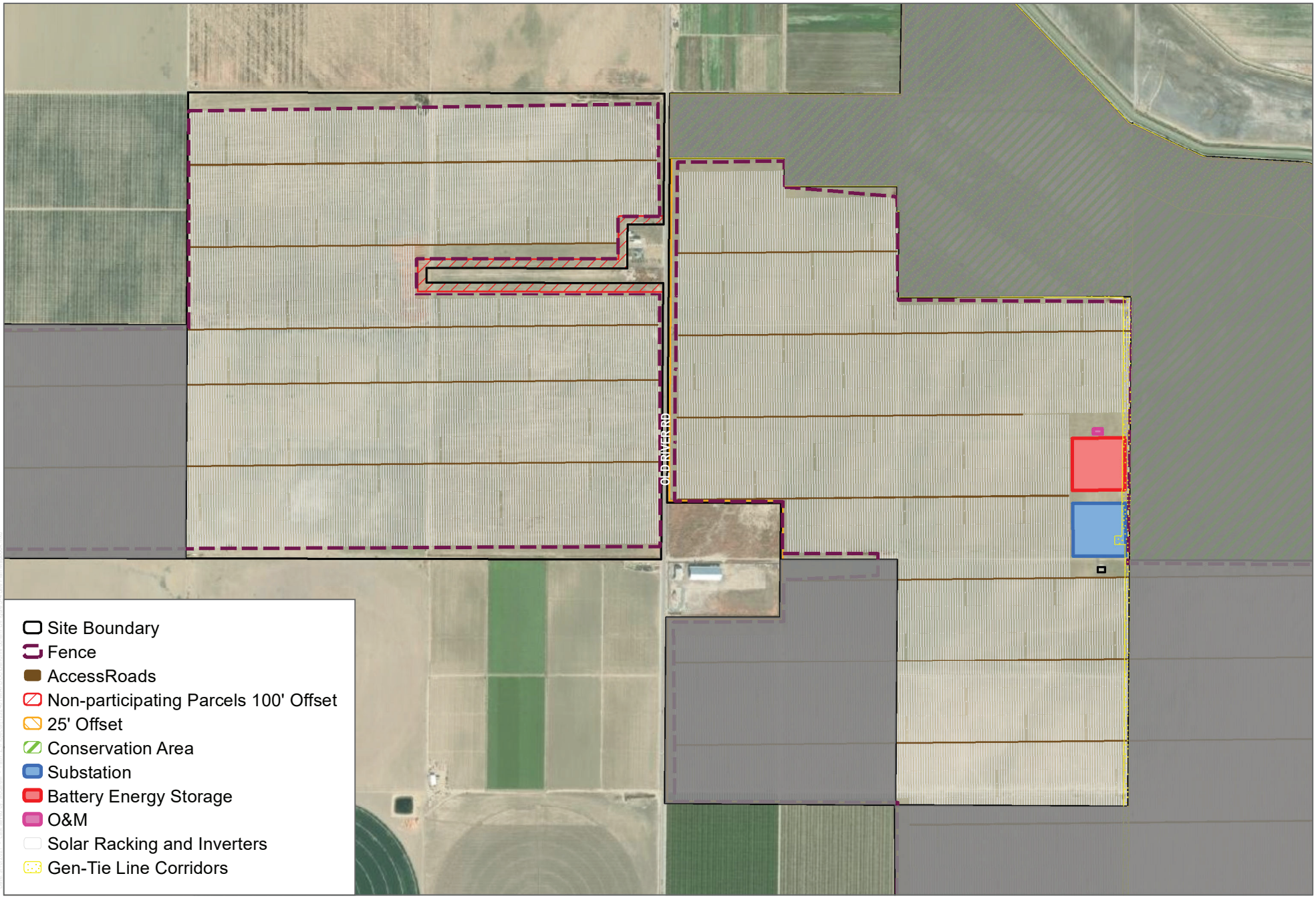

SOURCE: Maxar 2020

DUDEK

0 700 1,400 Feet

Case Numbers:

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Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-4B
Site 2 - Site Plan
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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SOURCE: Maxar 2020

DUDEK

0 650 1,300 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-4C
Site 3 - Site Plan
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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SOURCE: Maxar 2020

DUDEK

0 435 870 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-4D
Site 4 - Site Plan
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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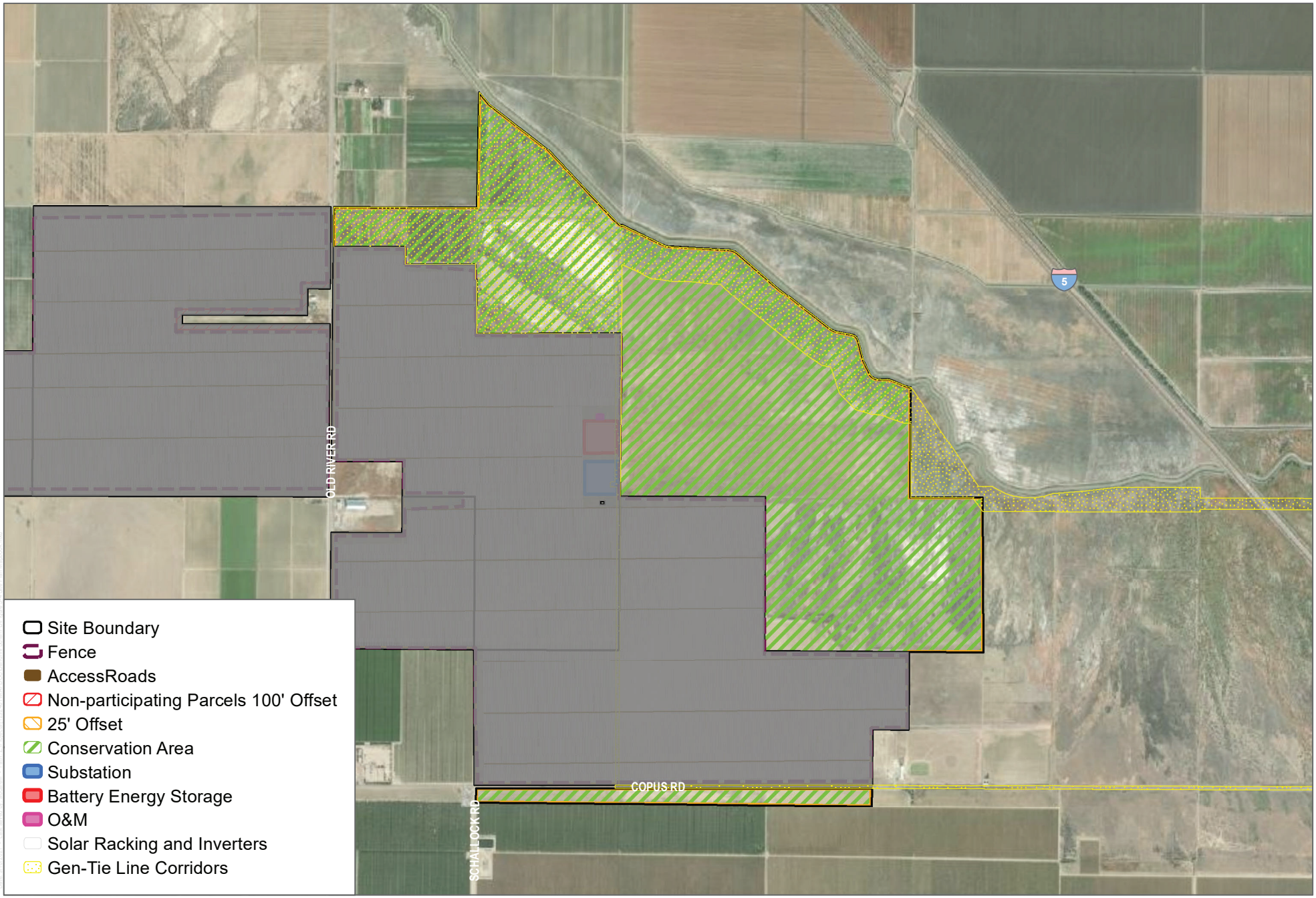

SOURCE: Maxar 2020

DUDEK

0 1,150 2,300 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-4E

Site 5 - Site Plan

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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3.4 Environmental Setting

3.4.1 Regional Setting

As described in Section 3.2, the project site is located in the valley region of Kern County, specifically in proximity to Interstate 5, SR-99, and SR-166. The project site is located primarily on flat terrain, currently used for agricultural operations and/or designated for agricultural use. The project is located across multiple U.S. Geological Survey quadrangles, including the Conner, Conner SW, and Coal Oil Canyon quadrangles.

3.4.2 Local Setting

The Kern County Sheriff's Office would provide law enforcement and public safety services to the project site, as the Kern County Sheriff's Office serves unincorporated areas of Kern County (KCSO 2017). The Kern County Sheriff's Office Lamont Substation, located at 12022 Main Street, Lamont, California 93241, is the closest police station to the project site, located approximately 14 miles northeast of the project site. The Kern County Fire Department provides fire protection and emergency medical services to unincorporated areas of Kern County, and thus would provide fire protection services to the project site (KCFD 2020). Kern County Fire Station 55 is the fire station located closest to the project site, approximately 13 miles southeast of the project site at 5441 Dennis McCarthy Drive, Lebec, California 93243.

The nearest private airport is the Skydive San Joaquin Valley Airport, which directly borders the eastern boundary of the project (Site 3). The nearest public use airports are the Bakersfield Municipal Airport, located at 2000 South Union Avenue, Bakersfield, California 93307, approximately 18 miles north of the project site, and the Taft-Kern County Airport, located at 468 Airport Road, Taft, California 93308, approximately 20 miles northwest of the project site. The project site is not located within any safety or noise contour zones for these airports, nor is the project site located within any designated airport land use plan areas.

There are three sensitive receptors (single-family residences) located in proximity to the project. The first receptor is a residential home located immediately adjacent to Site 4, south of Copus Road. The second receptor is a residential home located immediately adjacent to Site 2, located west of Old River Road. The third receptor is a residential home located north of Copus Road, approximately 0.40 mile east of Site 3. See Figure 3-3, *Aerial Photograph*, for receptor locations.

3.4.3 Surrounding Land Uses

Existing land uses surrounding the project site consist largely of agricultural parcels sparsely occupied by farm or rural residential uses. The primary zoning classification in the 5-mile radius surrounding the project site is Zone A (Exclusive Agriculture). Rural residential buildings are located in the unincorporated community of Mettler, located approximately 8.5 miles southeast of the project site. There are no schools within 5 miles of the project site. The nearest school is Arvin High School, located approximately 17 miles northeast at 900 Varsity Road, Arvin, California 93203. Table 3-2, *Existing Project Site and Surrounding Property's Existing Land Use, General Plan Map Code Designations, and Zoning*, details the surrounding land uses, including the General Plan designations and existing zoning.

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

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
Site 1	**Agriculture**	**8.1/2.5 (Intensive Agriculture/Flood Hazard)**	**A (Exclusive Agriculture)**
North	Agriculture, Resource Management	8.1 (Intensive Agriculture), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)
East	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.5 (Resource Management)	A FSP (Exclusive Agriculture, Floodplain Secondary), A (Exclusive Agriculture
South	Agriculture, Mineral and Petroleum	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.4/2.3 (Mineral and Petroleum)	A (Exclusive Agriculture)
West	Agriculture	8.1 (Intensive Agriculture)	A (Exclusive Agriculture)
Site 2	**Agriculture**	**8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater); and 8.1/2.5 (Intensive Agriculture/Flood Hazard)**	**A (Exclusive Agriculture)**
North	Agriculture, Mineral and Petroleum, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.4/2.3 (Mineral and Petroleum), 8.5 (Resource Management)	A (Exclusive Agriculture), A-1 (Limited Agriculture)
East	Agriculture, Industrial, Highway	8.1 (Intensive Agriculture, min. 20-acre parcel size), 7.2 (Service Industrial), 6.3 (Highway, Commercial)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 PD (General Commercial, Precise Development), M-2 (Medium Industrial, Precise Development)
South	Agriculture	8.1 (Intensive Agriculture, min. 20-acre parcel size)	A FSP (Exclusive Agriculture, Floodplain Secondary), A (Exclusive Agriculture
West	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)
Site 3	**Agriculture**	**8.1/2.3 (Intensive Agriculture/Shallow Groundwater)**	**A (Exclusive Agriculture)**
North	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)

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

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
East	Agriculture, Industrial, Highway	8.1 (Intensive Agriculture, min. 20-acre parcel size 7.2 (Service Industrial), 6.3 (Highway, Commercial)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 PD (General Commercial, Precise Development), M-2 (Medium Industrial, Precise Development)
South	Agriculture	8.1 (Intensive Agriculture, min. 20-acre parcel size)	A FSP (Exclusive Agriculture, Floodplain Secondary), A (Exclusive Agriculture
West	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)
Site 4	**Agriculture**	**8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater)**	**A (Exclusive Agriculture)**
North	Agriculture	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size)	A (Exclusive Agriculture), A-1 (Limited Agriculture)
East	Agriculture, Commercial, Industrial, Highway, Residential	8.1 (Intensive Agriculture, min. 20-acre parcel size), 7.1 (Light Industrial), 7.2 (Service Industrial), 6.2 (General Commercial), 6.3/2.5 (Highway Commercial), 5.3 (Maximum 10 Units/Net Acre)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 (General Commercial), M-1 (Light Industrial, Precise Development), M-2 (Medium Industrial, Precise Development), CH (Highway Commercial), R-1 (Low Density Residential, Mobile Home)
South	Agriculture, Commercial, Industrial, Highway	8.1/2.3/2.5 (Intensive Agriculture, min. 20-acre parcel size), 7.1 (Light Industrial), 7.2/2.3 (Service Industrial), 6.2 (General Commercial), 6.3 (Highway Commercial),	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 (General Commercial), M-1 (Light Industrial, Precise Development), M-2 (Medium Industrial, Precise Development), CH (Highway Commercial)

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

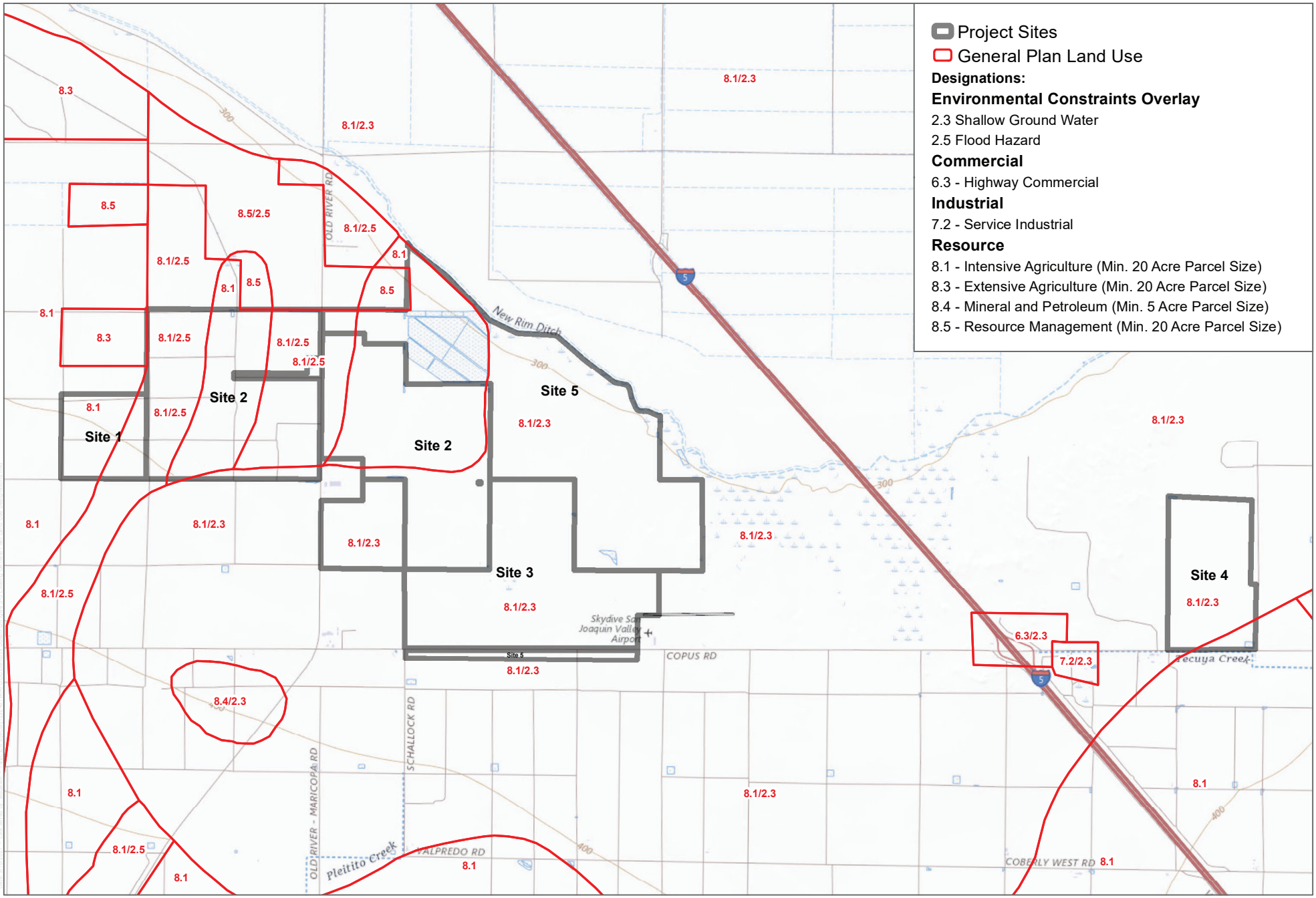
Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
West	Agriculture, Commercial, Industrial, Highway	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size), 7.1 (Light Industrial), 7.2/2.3 (Service Industrial), 6.2 (General Commercial), 6.3 (Highway Commercial)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 (General Commercial), M-2 (Medium Industrial, CH (Highway Commercial)
Site 5	**Agriculture**	**8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater)**	**A (Exclusive Agriculture)**
North	Agriculture, Mineral and Petroleum, Resource Management	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size)	A (Exclusive Agriculture)
East	Agriculture, Industrial, Highway	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size),	A-1 (Limited Agriculture)
South	Agriculture	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size),	A (Exclusive Agriculture)
West	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.1/2.5 (Intensive Agriculture/Flood Hazard), 8.5 (Resource Management)	A (Exclusive Agriculture)

SOURCE: County of Kern 2009

3.4.4 Project Site Conditions

The project site is located entirely within the Kern County General Plan area and is composed of 33 privately owned parcels. As shown in Figure 3-5, *Existing General Plan Land Use Designations*, the project site is designated as Map Code 8.1 (Intensive Agriculture), 8.1/2.3 (Intensive Agriculture/Shallow Groundwater), and 8.1/2.5 (Intensive Agriculture/Flood Hazard). As shown in Figure 3-6, *Existing Zoning*, the project site is zoned A (Exclusive Agriculture).

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas on its Flood Insurance Rate Maps. According to the Flood Insurance Rate Maps for the project site, portions of the project site are located in a 100-year flood zone (Zone A – 1% annual chance of flooding), as shown in Figure 3-7, *FEMA Floodplain Zone Hazards*.



SOURCE: USGS National Map 2021; Kern County 2016

DUDEK

0 2,000 4,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-5

Existing General Plan Land Use Designations

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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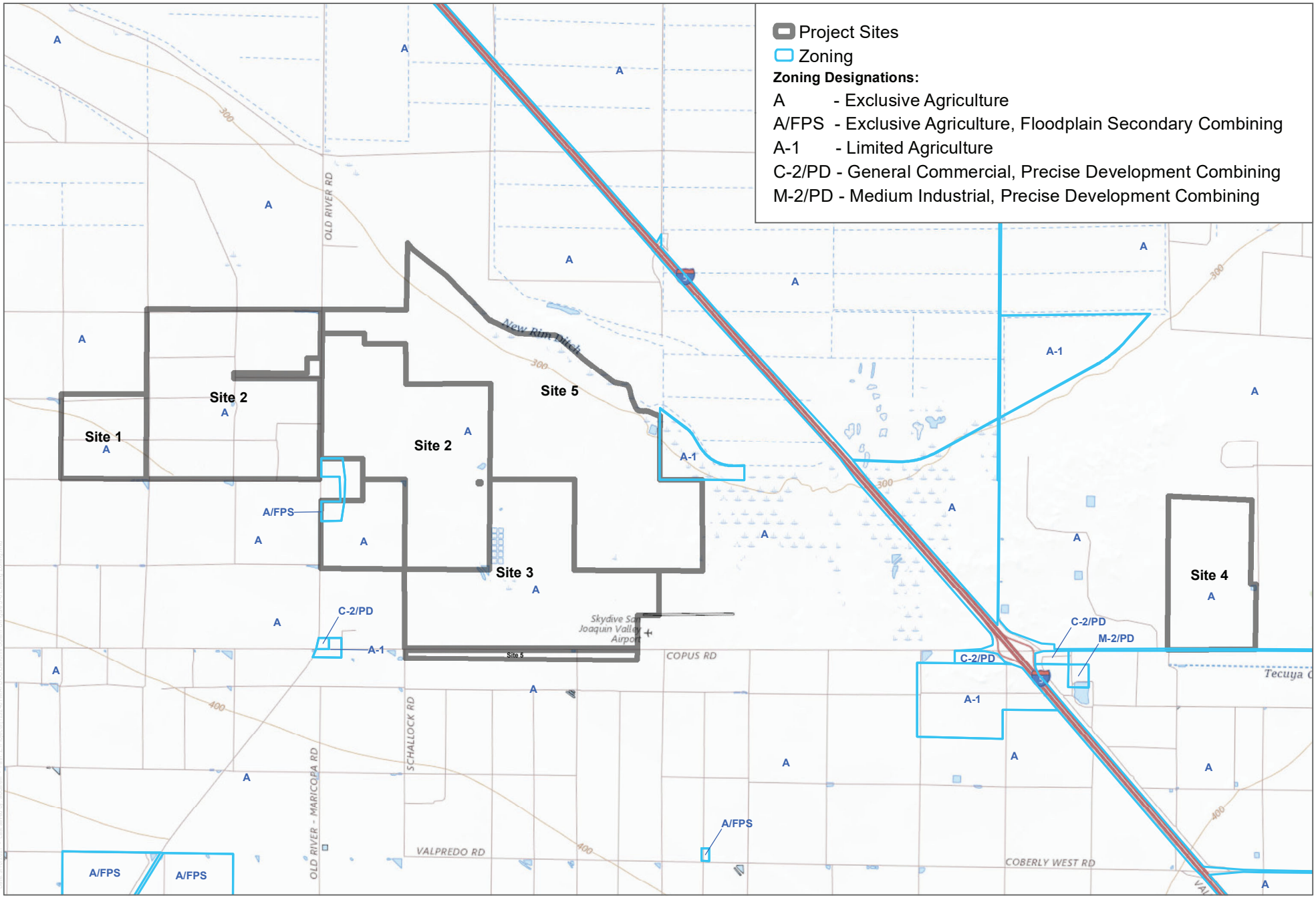

SOURCE: USGS National Map 2021; Kern County 2010

DUDEK

0 2,000 4,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-6
Existing Zoning
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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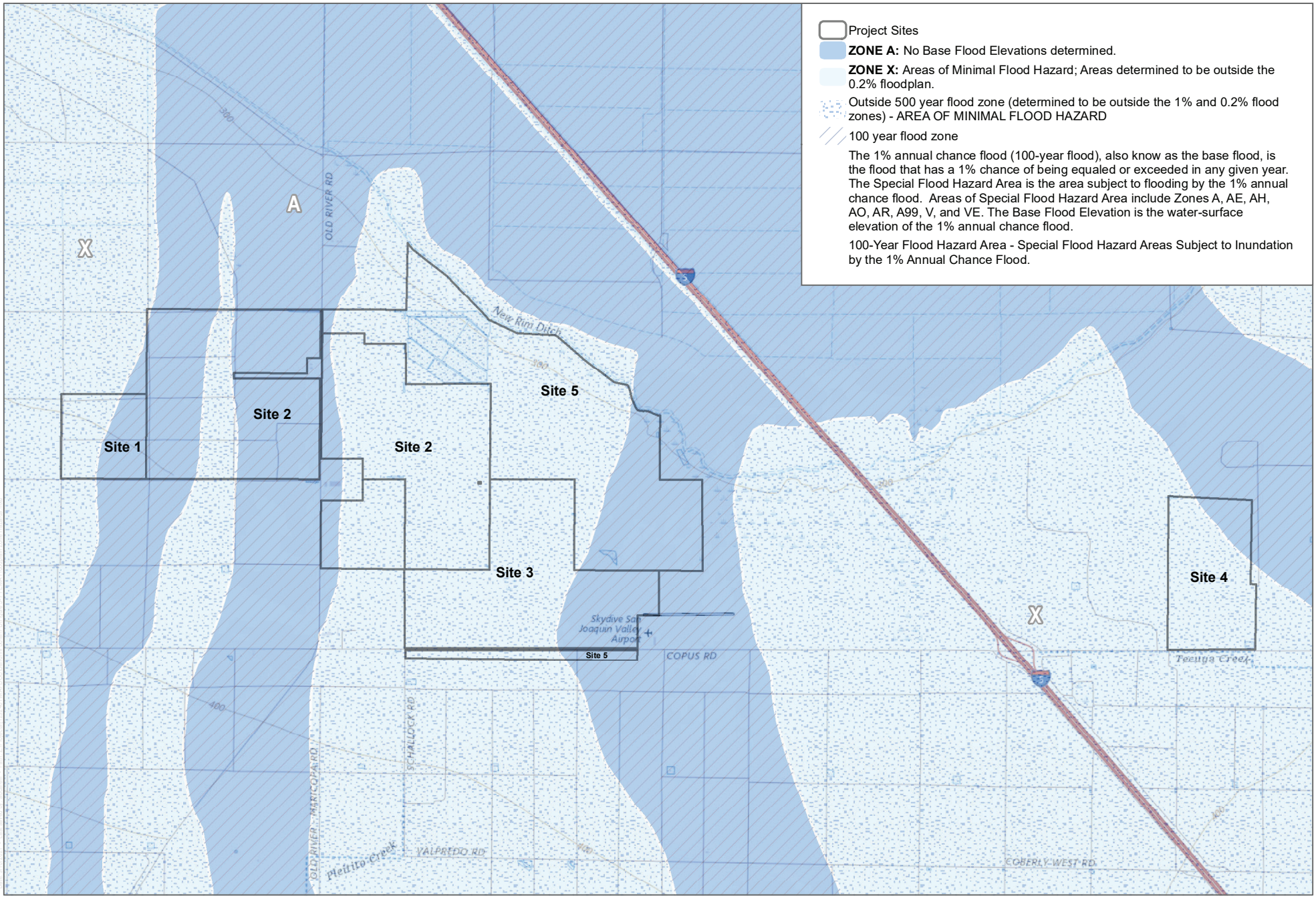

SOURCE: USGS National Map 2021; FEMA 2020

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Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 3-7

FEMA Floodplain Zone Hazards

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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The agricultural land upon which the project would be developed is either fallow or actively planted with annual row crops. The five project sites are within an area that has historically been used for agricultural crop production, and approximately 1,403.94 acres of the approximately 3,469.97 total project acres (13 of the 33 parcels within the project site boundaries) are subject to active Williamson Act Land Use contracts, as outlined in Table 3-3, *Williamson Act Land Use Contract Cancellations*, and as shown in Figure 3-8, *Williamson Act – Active and Nonrenewals*. Additionally, 9 of the 33 parcels within the project site are identified on the Farmland Mapping and Monitoring Program (DOC 2020) as containing Important Farmland (Figure 3-9, *Farmland Mapping and Monitoring Program Designations*). Project parcels are located within Agricultural Preserve No. 12 and No. 13.

TABLE 3-3: WILLIAMSON ACT LAND USE CONTRACT CANCELLATIONS

WALUC Cancellation Number	Kern County Recorded Document Number	Original Contract Date	Status	APN(s)	Acreage to be Removed
21-01	Book 4273, Page 13 Doc No. 28397	4/29/1969	Nonrenewal	445-062-34	289.11
21-02	Book 4492, Page 243 Doc No. 12231	2/24/1971	Nonrenewal	*295-100-19, 295-130-21, 295-130-48, 295-130-51, 295-120-15, 295-130-26*	*0.0*[a]
21-03	Book 4373, Page 24 Doc No. 10965	2/17/1970	Nonrenewal	*295-130-57*, 295-130-62	*427.65*[b]
21-04	Book 4272, Page 933 Doc No. 28386	3/31/1969	Nonrenewal	*295-130-32*, 295-130-64	*338.35*[c]

NOTES: WALUC = Williamson Act Land Use Contract; APN = Assessor's Parcel Number.

[a] = All APNs associated with WALUC Cancellation Number 21-02 are located within project Site 5 (proposed conservation area); this acreage would be preserved as-is and should not be considered as acreage to be removed.

[b] = APN 295-130-57 is located within project Site 5 (proposed conservation area) and this acreage (191.35 acres) would be preserved as-is and should not be considered as acreage to be removed.

[c] = APN 295-130-32 is located within project Site 5 (proposed conservation area) and this acreage (16.13 acres) would be preserved as-is and should not be considered as acreage to be removed.

Approximately 1% of the project site is located on Prime Farmland as designated under the California Department of Conservation's Farmland Mapping and Monitoring Program, 34.9% is located on land designated as Farmland of Statewide Importance, and 4.2% is located on land designated as Unique Farmland (see Figure 3-9, *Farmland Mapping and Monitoring Program Designations*). According to the California Department of Conservation, Prime Farmland is defined as land that has the best combination of physical and chemical characteristics for the production of crops. Farmland of Statewide Importance is defined as land other than Prime Farmland that has a good combination of physical and chemical characteristics for the production of crops. Unique Farmland is defined as land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, yet has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date (DOC 2020). Site 1 is not located in an agricultural preserve; however, Site 2 and Site 3 consist of several parcels located within an agricultural preserve, as well as parcels located outside an agricultural preserve. Site 4 and Site 5 are located entirely within an agricultural preserve.

Portions of the project site are located in Mineral Resource Zone (MRZ) 1, which is defined as an area with little likelihood for the presence of significant mineral resources (Conservation Biology Institute 2020). The remainder of the project land area not located within MRZ-1 is not designated as a mineral resource zone (see Figure 3-10, *Mineral Resource Zones*). However, a number of mineral rights holders currently maintain active rights to mineral resources on several of the project parcels.

3.5 Land Use and Zoning

3.5.1 Kern County General Plan

The project site is located entirely within the Kern County General Plan area and is composed of 33 privately owned parcels. As shown in Figure 3-5, *Existing General Plan Land Use Designations*, the project site is designated as Map Code 8.1 (Intensive Agriculture), 8.1/2.3 (Intensive Agriculture/Shallow Groundwater), and 8.1/2.5 (Intensive Agriculture/Flood Hazard) (County of Kern 2009).

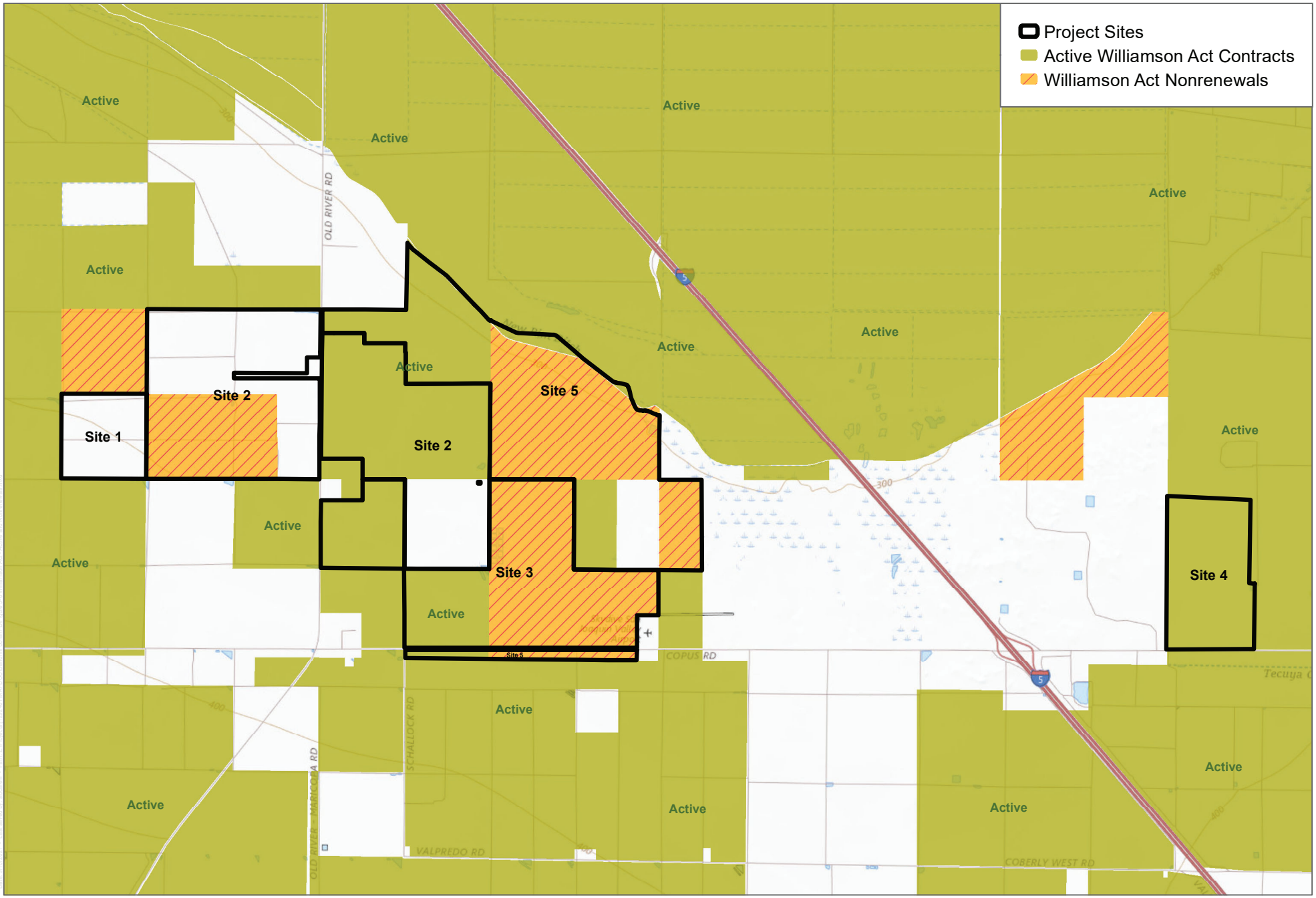
The agricultural land upon which the project would be developed is either fallow or actively planted with annual row crops. An amendment to the County's General Plan Land Use Element would not be required as part of project implementation because the 8.1 (Intensive Agriculture) land use designation is compatible with the project site's A (Exclusive Agriculture) zone classification. The proposed project requests a General Plan Amendment to the County's General Plan Circulation Element to remove a number of future road reservations identified in the Circulation Element to increase project site optimization (see Figure 3-11, *Proposed Circulation Element Amendment – Road Reservation Removals*).

3.5.2 Kern County Zoning Ordinance

As shown in Figure 3-6, *Existing Zoning*, the Kern County Zoning Ordinance designates the project site as Zone A (Exclusive Agriculture) under the County's Zoning Classification. Surrounding areas up to 5 miles from the project site are also zoned as "A – Exclusive Agriculture." According to Kern County Zoning Ordinance Section 19.12.030 G, solar energy electrical generators, when not accessory to a permitted or conditionally permitted use, are permitted within the A Zone District subject to the approval of a Conditional Use Permit.

3.5.3 Williamson Act Contracts

A utility scale 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 Williamson Act contracts, and the cancellation of applicable contracts is required. Petitions have been filed for the notice non-renewal and cancellation of each Williamson Act contract within the project boundaries. See Table 3-3, *Williamson Act Land Use Contract Cancellations*, for details.



SOURCE: USGS National Map 2021; CA Dept of Conservation 2009

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Williamson Act Land Use Cancellations

FIGURE 3-8

Williamson Act - Active and Nonrenewals

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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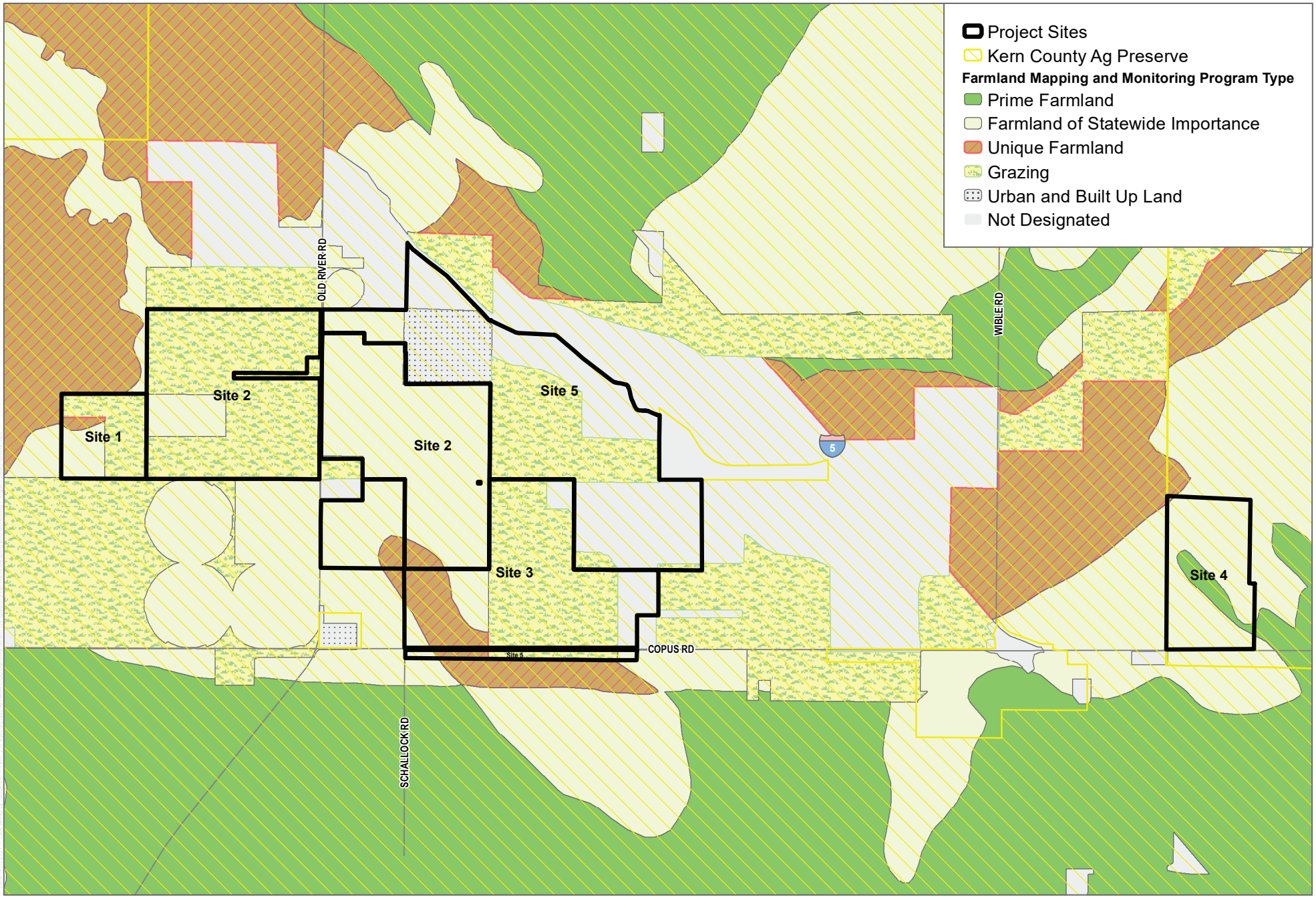

SOURCE: Maxar 2019; CA Dept of Conservation 2018; DRECP 2020

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Williamson Act Land Use Cancellations

FIGURE 3-9

Farmland Mapping and Monitoring Program Designations

Kern County Planning and Natural Resources Department

Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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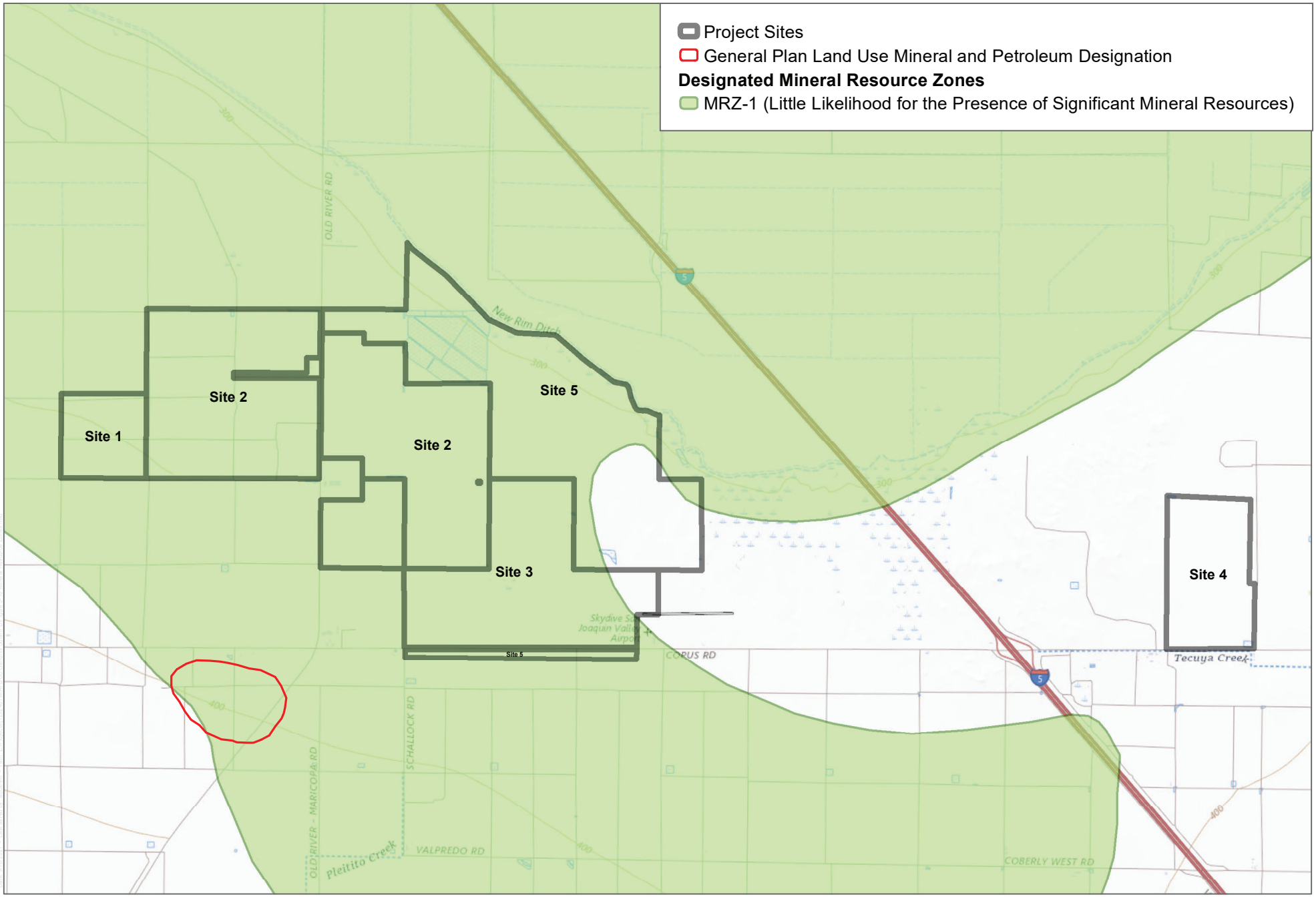

SOURCE: USGS National Map 2021;
California Department of Conservation 2009

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FIGURE 3-10
Mineral Resource Zones
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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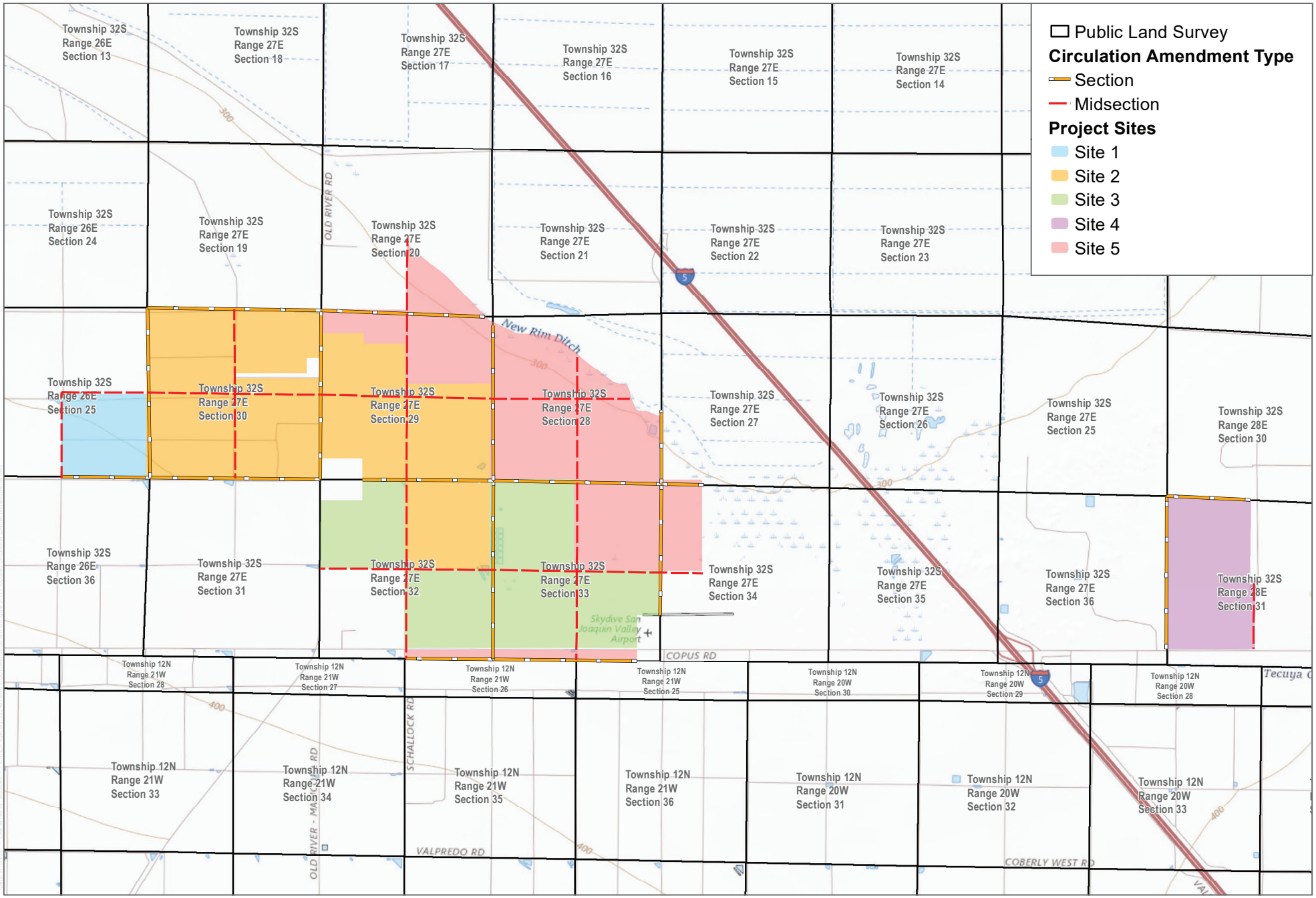

SOURCE: USGS National Map 2021

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FIGURE 3-11

Proposed Circulation Element Amendments

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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3.6 Proposed Project

The Sandrini Solar Project by EDPR CA Solar Park LLC (project proponent) includes a request for land use entitlements necessary to facilitate the construction and operation of a proposed PV solar facility with associated infrastructure on approximately 2,472.89 acres of privately owned land in the valley region of Kern County (Figure 3-1, *Site Vicinity*). As stated above, the PV solar facility would generate a combined (up to) 300 MW of renewable electrical energy and up to 100 MW of energy storage facilities. The project would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge Substation. Both lines would convey electricity back and forth between various phases of the project and the larger electrical grid. Any overhead electrical transmission lines may be additionally supported by guy-wires. Additionally, 34.5 kV collector lines would connect the various project components to transmit energy to the larger transmission line system.

The proposed project would consist of five separate sites (Sites 1 through 5), located on 33 parcels of privately owned land, totaling approximately 3,469.87 acres; however, it is anticipated that approximately 2,472.89 acres would be used (developed) for construction of the solar panels and permanent facilities, and the remaining 996.98 acres would be restricted to use for conservation of habitat (proposed conservation area) and could not be developed.

Implementation of the project as proposed would include the following requests:

a) Conditional Use Permits (CUPs) to allow for the construction and operation of four solar facilities with a total generating capacity of approximately 300 MW AC of renewable energy (broken down by site, below), including up to 100 MW of combined energy storage (for all sites), within the A (Exclusive Agriculture) Zone District (in Zone Maps 159, 160, and 161) pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance. The total megawatts listed for each site represents the maximum megawatt that could be developed on the site; however, total megawatts for the entire project site would not exceed 300 MW.

- **Site 1** (up to 20 MW AC)
  - CUP No. 9, Map No. 159 for approximately 160 acres
- **Site 2** (up to 235 MW AC)
  - CUP No. 27, Map No. 160 for approximately 1,229.37 acres
- **Site 3** (up to 125 MW AC)
  - CUP No. 28, Map No. 160 for approximately 789.21 acres
- **Site 4** (up to 30 MW AC)
  - CUP No. 27, Map No. 161 for approximately 289.11 acres
- **Site 5** – On-site conservation land for benefit of solar project (proposed conservation area)
  - CUP No. 29, Map 160 for approximately 996.98 acres

b) General Plan Amendment to the Circulation Element of the Kern County General Plan to remove future road reservations on the section and mid-section lines within the project boundaries (refer to Figure 3-11, *Proposed Circulation Element Amendments*).

- General Plan Amendment No. 2, Map No. 159

- General Plan Amendment No. 3, Map No. 160
- General Plan Amendment No. 4, Map No. 161

c) Williamson Act Land Use Contract Cancellations:

- **No. 21-01**
  - Cancellation of approximately 289.11 acres from Document No. 28397, Book 4273, page 13.
- **No. 21-03**
  - Cancellation of approximately 427.65 acres from Document No. 10965, Book 4373, page 24.
- **No. 21-04**
  - Cancellation of approximately 338.35 acres from Document No. 28386, Book 4272, page 933.

Power generated by the project would assist the state in achieving the Renewables Portfolio Standard under Senate Bill 350, which requires 50% of all electricity sold in the state to be generated from renewable energy sources by December 31, 2030. Power generated by the project would be sold to California investor-owned utilities, municipalities, community choice aggregations, or other purchasers in furtherance of the California Renewable Energy Portfolio Standard.

The anticipated Commercial Operation Date for the project is December 2022, and the project is expected to operate for approximately 35 years, although a longer project life expectancy could be realized by replacing and repowering certain project components. 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.

3.7 Project Components

The combined project facilities would include the following components, which are described in greater detail thereafter:

- Solar generator
- Battery energy storage
- Security/Fencing
- Interconnection
- Project collector substations
- Generation tie-line (gen-tie line)
- Site access
- Project site lighting
- Operations and maintenance (O&M) building
- On-site meteorological stations and towers

Solar Generator

The project would generate direct-current (DC) electricity through a series of solar PV modules connected to one another on ground-mounted single-axis tracking structures. Electricity would flow from the panels to solar inverters via DC collection wires. The solar array fields would be arranged in groups called "blocks," with inverter stations generally located centrally within the blocks. Blocks would produce direct electrical current (DC), which is converted to alternating electrical current (AC) at the inverter stations. Once the DC electricity has been converted to AC electricity, the output from the solar inverters would be aggregated at two on-site collector substations where it would be stepped up to a higher voltage and then moved along gen-tie lines to the project's point of interconnection (POI) at PG&E's Wheeler Ridge Substation.

Battery Energy Storage

The project would include a lithium-ion battery energy storage system consisting of a number of battery storage units capable of storing DC electricity. The batteries would be physically arranged in racks that would be housed in temperature-controlled facilities referred to as the battery enclosures. These enclosures would be equipped with all the necessary ancillary equipment, including appropriate fire suppression systems and other electrical control units to safely operate the battery storage units.

The battery units would either be AC coupled or DC coupled with the solar project. When the battery storage is AC coupled, the storage facility is centralized at a project substation, and the solar and storage systems have independent inverters, medium-voltage transformers, and medium-voltage collection circuits. When the battery storage is configured as a DC coupled system to the solar project, the batteries are distributed throughout the solar arrays and share the solar inverter, medium-voltage transformers, and medium-voltage collection circuits. Past the project collector substation, downstream use of the gen-tie line and POI facilities is shared by both the solar and battery storage systems.

Security/Fencing

The facility would be secured with a 6- to 8-foot-high chain-link fence along the perimeter. Vegetation would be cleared from the area underneath the arrays, as necessary, and the site would be graded per the grading and drainage plan specifications that will be submitted for County review and approval. Access roads to be constructed around and between the arrays may include crushed aggregate, if necessary, to prevent damage to existing soils. The arrays would sit on piles that elevate them well above the surface to reduce the need for additional site landscaping.

Interconnection

The project's POI is the point at which the power generated by the project will be delivered to the electrical grid. The project will interconnect at PG&E's Wheeler Ridge Substation, with 100 MW interconnecting at 70 kV and 200 MW interconnecting at 230 kV. This project is currently in the California Independent System Operator (CAISO) interconnection queue and has been studied for delivery of the full 300 MW of solar generation proposed under this CUP application.

Project Substations

The two proposed collector substations would be the points where the power generated from the project would be aggregated. The main purpose of the substations is to step up the voltage of the generated power to match the interconnection voltage through the use of a step-up transformer. In addition, the project substations would include protective relays and circuit breakers that would protect the grid from any disruption or disturbances, either external or internal to the project. Common substation equipment includes a control building, transformers, circuit breakers, meters, and overhead switches. The project substations would be secured with a 6- or 8-foot-tall chain-link fence with triple-strand barbed wire. The internal grounds of the project substations would be covered in crushed aggregate.

Generation Tie Lines

The project would have two gen-tie lines at 230 kV and 70 kV on shared infrastructure that would connect the collector substations to the project's POI. The total length of the gen-tie line would be up to 11 miles from the on-site collector substations to the existing PG&E Wheeler Ridge Substation. The project intends to construct the gen-tie lines within public rights-of-way and easements across private land. Additionally, 12 kV collector lines would connect the various on-site project components to transmit energy to the larger transmission line system.

Site Access

Primary site access would be provided via Copus Road, Old River Road, SR-166 via Interstate 5, and SR-99. Access to Site 1 is provided from Old River Road through Site 2. Access to Sites 2 and 3 is via Old River Road and Copus Road. Site 4 has access from Copus Road. Site 5 would not be developed (except for potential transmission lines passing through this area), and thus, would not need access.

Project Site Lighting

Motion sensitive, directional security lights would be installed to provide adequate illumination around the collector substation areas, the O&M building, each inverter-transformer station, at gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. All lighting also would conform to applicable County rules and regulations for outdoor lighting.

O&M Building

Employees of the project may work out of an O&M building on site. The O&M building would have adequate parking, including spaces that are compliant with the Americans with Disabilities Act, and would meet any additional parking requirements for local and/or state regulations. The O&M building is required to receive water service through a private domestic well and an engineered septic system. The O&M building may be co-located with the substation(s).

3.7.1 Construction Activities

Project construction is anticipated to commence in December 2021 and would take place in multiple phases. Exact sequencing of phasing would depend on a number of variables, but generally the construction process would involve the following activities:

- Once construction is set to commence, the project site would typically be graded to provide a level foundation for roads, project components, and the O&M building. During construction, water would be used as conditions require for dust suppression on and along the project roads. The amount of water used would vary based on site conditions and local rainfall amounts, but in general would be less than 1 gallon per linear foot of project roadway per day.
- Following site grading and preparation, steel piles would be driven into the ground and the solar PV tables, trackers, and panels would be installed on top of them. Trenches would be dug on site to bury the underground collection cables that would conduct the energy output from the panels to the solar inverters, storage inverters or converters, the battery storage system, and ultimately the project substations.
- Remaining construction activities would include installation of the solar inverters and storage inverters or converters on site, installation of the battery racks within the battery enclosures, construction of the project substations, and construction of the two high-voltage gen-tie lines between the project collector substations and the POI.

Schedule and Workforce

Construction equipment would operate between 7:00 a.m. and 7:00 p.m. Monday through Friday for up to a maximum of 8 hours per piece of equipment, daily. Weekend construction work is not expected to be required, but may occur on occasion, depending on schedule considerations and site conditions. All construction work, including any weekend work, would be required to comply with Kern County Noise Ordinance standards. It is estimated that the project would employ approximately 650 workers during the construction period. The duration of construction is estimated at 12 to 18 months. Employees would have the option to drive their own automobiles to the project site; alternatively, a shuttle service may be provided from one or more locations that are yet to be determined. It is anticipated that, due to the size of the project site, parking for all employee vehicles could be accommodated on site if a shuttle service is not provided. Construction worker parking areas would be located within each active construction site.

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 on site for each of the four sites and within proximity to the area where work would be undertaken. For work along the gen-tie line 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.

Construction Water Use

The primary proposed source of water for project construction is groundwater from a privately owned well (Maricopa Orchards, Well 1/Old River Well) located adjacent to the project parcels in the Wheeler Ridge-Maricopa Water Storage District. Well 2/Copus Well, which is also located within the Wheeler Ridge-

Maricopa Water Storage District, was also evaluated for use. A water rights/pumping purchase agreement with a private groundwater well landowner would cover construction water usage. During construction, water would be used as conditions require for dust suppression on and along the project roads. The amount of water used would vary based on site conditions and local rainfall amounts, but in general would require approximately 65 acre-feet of water to support construction over a 14-month period. During construction and decommissioning, potable water for drinking and hand washing would be brought to the site by a bottled water service provider.

Electrical Supply

Temporary power for construction would be supplied by mobile diesel-driven generator sets, batteries, temporary electrical service from a local provider, or a combination of all three methods.

Site Grading and Earthwork

Site preparation of the project site would involve clearing and grubbing of the existing vegetation within the approximately 2,448-acre development footprint. Grading would be required throughout the development footprint and is expected to be balanced on site, so no soil hauling off site would be required. Dust-minimizing measures would be implemented, such as maintaining natural vegetation where possible, application of water, application of dust suppressants, and placement of wind-control fencing. After preparation of the site, the pads for structures and equipment would be prepared per geotechnical engineer recommendations.

Construction activities are expected to include mowing, excavation, and grading of the project site. Where appropriate, scrapers, excavators, dozers, water trucks, paddlewheels, haul vehicles, and graders may all be used to perform grading activities. Targeted land-leveling equipment, such as a smooth steel drum roller, would be used to even the surface of the ground and to compact the upper layer of soil to a value recommended by a geotechnical engineer for structural support.

Trenching would be required for any placement of underground electrical, collector, and communication lines, and may include the use of trenchers, backhoes, excavators, haul vehicles, compaction equipment, and water trucks.

All applicable local, state, and federal requirements would be incorporated into the construction activities for the project site. Prior to initial construction mobilization, pre-construction surveys would be performed, and sediment and erosion controls would be installed in accordance with an approved Stormwater Pollution Prevention Plan. Stabilized construction entrances and exits would be installed at driveways to mitigate tracking of sediment onto adjacent public roadways. Site preparation would also be consistent with County best management practices and San Joaquin Valley Air Pollution Control District rules for dust control.

Solar Array Assembly

The solar arrays would include support structures and associated electrical equipment. Steel piles would be driven into the ground using pneumatic techniques, and piles would have a maximum embedment of 10 feet. Once the piles have been installed, the PV tables, trackers, and panels would be installed on top. The solar PV modules would be connected to one another on ground-mounted single-axis tracking structures. The overall height of the panels would be 10 to 12 feet, with a maximum potential height of 20 feet. The final design of the horizontal array support structures may vary, depending on the final selection of the PV

technology. For the single-axis tracking system, the trackers and their associated motors would be mounted to the horizontal cross-members and aligned in rows in the north/south direction. Solar array assembly and installation are expected to require trenching machines and excavators, compactors, concrete trucks and pumpers, vibrators, forklifts, boom trucks, graders, pile drivers, drilling machines, and cranes.

As the solar arrays are installed, the on-site collector substations and other project components described above would be constructed, and the electrical collection and communication systems would be installed. Within the solar fields, trenches would be dug on site to bury the underground collection cables that would conduct the energy output from the panels to the solar inverters, storage inverters or converters, the battery storage system, and ultimately the project substation(s).

Solid and Nonhazardous Waste

The project site would produce a small amount of solid waste from construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation wastes. These wastes would be segregated for recycling. Non-recyclable wastes 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. Vegetation waste generated by site clearing and grubbing would be chipped/mulched and spread on site or hauled off site to an appropriate green waste facility. The closest Class III municipal landfill is the Bakersfield Metropolitan Sanitary Landfill, which is located approximately 20 miles northeast of the easternmost project Site 4. The Bakersfield Metropolitan Sanitary Landfill is an active public Class III sanitary landfill owned by the County and operated by the Kern County Public Works Department.

Hazardous Materials

The hazardous materials used for construction would be typical of most construction projects of this type. Materials would include small quantities of gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, ethylene glycol, dust palliative, herbicides, and welding materials/supplies. A hazardous materials business plan would be provided to Kern County Public Health – Environmental Health Services Division/Hazardous Materials Section for review and approval. The hazardous materials business plan would include a complete list of all materials used on site and information regarding how the materials would be transported and in what form they would be used. This information would be recorded to maintain safety and prevent possible environmental contamination or worker exposure. During project construction, safety data sheets for all applicable materials present at the site would be made readily available to on-site personnel.

Hazardous Waste

Small quantities of hazardous wastes would most likely be generated over the course of construction. These wastes may include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Workers would be trained to properly identify and handle all hazardous materials. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped off site for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location.

3.7.2 Operation and Maintenance

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

The anticipated commercial operation date for the proposed project is December 31, 2022, and the project is expected to operate for 35 years, although the ability may exist to extend the project's life by replacing and repowering certain components. The project would be privately owned and operated throughout its operational life and would not be open to the public. Compared to many other forms of energy generation, solar PV projects have relatively low operational requirements. Normal O&M activities include panel washings with de-iodized water trucked in via water trucks from off site, replacing broken or malfunctioning PV panels and batteries, maintaining manageable vegetation levels around the site, and monitoring energy production across the project. Typical operations materials include grease, spare PV panels, and miscellaneous hardware and tools used to support any maintenance activities. These materials would be stored in the O&M building and transported around the site as needed.

Schedule and Workforce

The proposed project is expected to employ up to 11 full-time employees responsible for maintenance and other activities related to ongoing facility operations. Employees would generally be on site during normal business hours, unless otherwise required. Only authorized personnel would be permitted on site, and these would generally be the employees operating and maintaining the facility, with the exception of other contractors, company personnel, or visitors who have been briefed on the relevant on-site safety procedures. Employees of the project would conduct work out of an on-site O&M building.

The facility would operate 7 days a week, 24 hours a day, generating electricity during normal daylight hours when solar energy is available. Maintenance activities may occur 7 days per week, 24 hours a day to ensure PV panel output when solar energy is available.

Operations Water Use

The proposed solar PV panels would require minimal water use. Panel surfaces would be washed to increase average optical transmittance, and panel washing is expected once per year using the water from multiple loads of water carried by 5,000-gallon water trucks. The annual water consumption for operations of the facility, including periodic PV module washing, is expected to be approximately 1 acre-foot per year. The primary proposed source of water for project operations is the privately owned well adjacent to the project parcels used for construction. As described above, a water rights/pumping purchase agreement with a private groundwater well landowner would cover construction and O&M water usage.

Wastewater/Septic System

A standard on-site septic tank and leach field would be used at the O&M building to dispose of sanitary wastewater from sinks and lavatories, designed to meet guidelines required by County laws, ordinances, regulations, and standards.

Electrical Supply Power

Electricity 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 plant lighting and security.

Solid and Nonhazardous Waste

The project would produce a small amount of waste associated with O&M activities, which could include broken and rusted metal, defective or malfunctioning modules, electrical materials, empty containers, and other miscellaneous solid waste, including the typical refuse generated by workers. Most of these materials would be collected and delivered back to the manufacturer or to recyclers. Non- recyclable waste 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. As described above, the closest Class III municipal landfill is the Bakersfield Metropolitan Sanitary Landfill, which is located approximately 20 miles northeast of the easternmost project site (Site 4). The Bakersfield Metropolitan Sanitary Landfill is an active public Class III sanitary landfill owned by the County and operated by the Kern County Public Works Department. Shipping materials, construction waste, and other general solid wastes would be separated for recycling, where available.

Hazardous Materials

Limited amounts of hazardous materials would be stored or used on the site during operations, which would include diesel fuel, gasoline and motor oil for vehicles, mineral oil to be sealed within the transformers, and lead acid-based and/or lithium-ion batteries for emergency backup. Appropriate spill containment and clean-up kits would be maintained during operation of the project.

Hazardous Waste

The proposed project would produce a small amount of hazardous waste associated with maintenance activities, which could include defective or malfunctioning modules, electrical materials, unused paint, solvents, cleaners, waste oil, oily rags, and batteries. Workers would be trained to properly identify and handle all hazardous wastes. Fuels and lubricants used in operations would be subject to the Spill Prevention, Containment, and Countermeasure Plan to be prepared for the proposed project.

Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped off site for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location.

3.7.3 Decommissioning

The reclamation process would commence following the project being taken offline and permanently out of service. A decommissioning plan and bonding are required under County conditions of approval. The project's reclamation and restoration process would consist of the removal of aboveground structures, majority removal of belowground foundations and infrastructure, and restoration of the site to its pre-construction condition. The decommissioning process is anticipated to be completed roughly 12 months after the project has been out of service. The reclamation process may be completed in multiple phases to ensure the entire site is returned to its pre-construction condition.

Solar equipment typically has a 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 with a utility or other power off taker. Upon completion of the Power Purchase Agreement term, the project operator may, at its discretion, choose to enter into a subsequent Power Purchase Agreement 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. Aboveground equipment that may be removed would include module posts and support structures, on-site transmission poles that are not shared with third parties and the overhead collection system within the project site, inverters, substation(s), transformers, electrical wiring, equipment on the inverter pads, and related equipment and concrete pads.

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 the 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 anticipated approvals needed for the project include adoption of CUPs, General Plan Amendments to the Circulation Element of the Kern County General Plan, and cancellations of active Williamson Act Land Use Contracts. Construction and operation of the proposed solar energy facility may require additional local, state, and federal entitlements, as well as discretionary and ministerial actions and approvals, including those listed in the sections below.

3.8.1 Kern County

- Consideration and certification of Final EIR
- Adoption of 15091 Findings and 15093 Findings and Statement of Overriding Considerations

- Adoption of the proposed Mitigation Monitoring and Reporting Program
- Approval by Kern County Board of Supervisors for the proposed CUPs for the project site
- Approval by Kern County Board of Supervisors for the proposed General Plan Amendments to the Circulation Element
- Approval by Kern County Board of Supervisors for the proposed of Williamson Act Land Use Contract Cancellations
- Approval by Kern County Board of Supervisors for Franchise Agreements for any use of public access easements for the gen-tie lines for the project
- Approval by Kern County Board of Supervisors of any required vacations of public access easements
- Kern County construction, grading, and building permits
- Kern County public works encroachment permits
- Kern County Fire Safety Plan

3.8.2 Other Responsible Agency Entitlements

- U.S. Army Corps of Engineers Section 404 permit (if required)
- California Department of Fish and Wildlife Section 1600 et seq. permits (Streambed Alteration Agreements) and Section 2081 Permit (state-listed endangered species)
- Central Valley Regional Water Quality Control Board Water Quality Certification (401 Permit), Waste Discharge Requirements, and National Pollution Discharge Elimination System Construction General Permit
- California Department of Transportation Right-of-Way Encroachment Permits and Oversized Loads Permits
- California Public Utilities Commission Section 851 Permit
- California Public Utilities Commission as required Franchise Route Agreement Local Section 851 Permit
- San Joaquin Valley Air Pollution Control District Authority to Construct/Permit to Operate/Fugitive Dust Control Plan

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 ultimately be required to implement the proposed project.

3.9 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 (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Section 15355):

> *"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.*

In addition, as stated in the CEQA Guidelines (CCR, Title 14, Division 6, Chapter 3, Section 15064[h][5]), "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."

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).

There are 36 cumulative projects within a 6-mile radius of the proposed project, as listed in Table 3-4, *Cumulative Projects List*. One solar project is located within 6 miles of the proposed project site (the Pastoria Solar Energy project). Figure 3-12**,** *Cumulative Projects*, shows the approximate location of the proposed projects in Kern County considered in the cumulative analysis.

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request/Status	Project Site APN(s)	Acreage/ Square Feet
KERN COUNTY PROJECTS – Figure 3-12						
Within 1-Mile of Project Site						
1. Gurjant Singh	9014 Jose Ramos Court, Bakersfield, CA	GPA, ZCC, CUP, Map 143-1 for agricultural trucking facility	GPA, ZCC, CUP	GPA, ZCC, CUP/Applied	185-530-029	5
2. Tetra Tech BAS	9705 Valpredo Avenue, Mettler Ca	CUP for soil amendment facility	CUP	CUP/Applied	238-211-072	18.94
3. Swanson Engineering Inc.	27300 Old River Road, Bakersfield, CA	CUP 26, Map 160 for EOT of agricultural trucking facility	CUP	CUP/Applied	295-130-397	9.55
4. Maricorps East Solar PV, LLC	12866 Copus Road, Maricopa, CA	Add to EIR: Solar/Wind; CUP for 170 MW Solar Facility on 1,134.5 acres	Add to EIR	EIR/Processing	295-130-819; -827; -835	1,134.5
5. Recurrent Energy by Seth Israel	Shafter Road and Ashe Road, Metro Area	CUP for 28 MW Solar Project	CUP	CUP/NA	184-490-04	235.00
Within 6-Mile of Project Site						
1. Oldenkamp Trucking	Unknown	Temporary CUP for an agricultural trucking facility	CUP	CUP / Review Complete	184-150-423	20.02
2. BHT Engineering, Inc	6809 Houghton Rd, Bakersfield, CA	Zone Change	ZC	ZCC, Map 142-16 / Applied	184-362-176	12.05
3. Marino and Associates	Northwest corner Bear Mountain Road and South H Street	EOT for one year for CUP 67, Map 142	CUP	CUP 67, Map 142 / NA	184-392-61	Unknown
4. Paul Dhanens Architect, Inc.	9630 Bear Mountain Blvd, Bakersfield, CA	A CUP for a contractor's storage yard with cargo containers in a C-2 zone	CUP	CUP / Applied	184-440-238	1.35
5. Recurrent Energy by Seth Israel	Shafter Road and Ashe Road Metro Area	CUP 28 MW Solar Project	CUP	CUP 28 / NA	184-490-04; -05	Unknown

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request/Status	Project Site APN(s)	Acreage/ Square Feet
KERN COUNTY PROJECTS – Figure 3-12						
6. Harbans Singh	10825 South Union Avenue, Bakersfield, 93307	General Plan Amendment and zone change to park trucks	GPA/ZC	GPA, Map 143-6; ZC, Map 143-6 / In Review	185-120-20	NULL
7. McIntosh & Associates	Unknown	Commercial Development of an industrial park-warehouse, distribution and retail showrooms.	EIR	EIR / Processing	185-140-084	306.92
8. Molina Santana & Norma	0 South Union Avenue, Bakersfield, CA	Precise Development Plan for Auto Towing Storage Yard, Santana & Norma Molina	PDP	Map 143-7 / Review Complete	185-180-296	3.3
9. MLA Properties, LLC/ Surjit Singh	West side of Costajo Road, between Shafter Road and Bear Mountain Blvd	Zone Change to M-1 and Precise Development Plan to allow an industrial development.	ZC / PDP	Map 143 / NA	185-321-20	NULL
10. Mark Alexander	16028 Costajo Drive	PD To allow a convenience market with gas pumps	PD	PD / Complete	185-321-27	NULL
11. Jacob Cornejo for Pattrick Marchbanks	Castajo Road, Bear Mountain Blvd	A request for a Precise Development Plan for an auto service and repair	PDP	PD / Complete	185-322-13	NULL
12. McIntosh & Associates	246 Bear Mountain Blvd, Bakersfield, CA	CUP, Zone Change and General Plan Amendment, Map 143-19, Future Agricultural truck parking & Future Service Industrial	CUP / ZC / GPA	CUP, ZC, GPA, Map 143-19 / Applied	185-330-024	8.73
13. Nicole Proiette	7261 Bear Mountain Blvd, Greenfield, Ca	Amendment to KCGP, modifying CUP's. Composting, Waste	EIR	CUP, GPA / Processing	185-350-535; -543; -550	481.27
14. NULL	13338 South H Street, Bakersfield, CA	CUP for Ag truck parking	CUP	CUP, Map 143-18 / NA	185-381-399	2.01

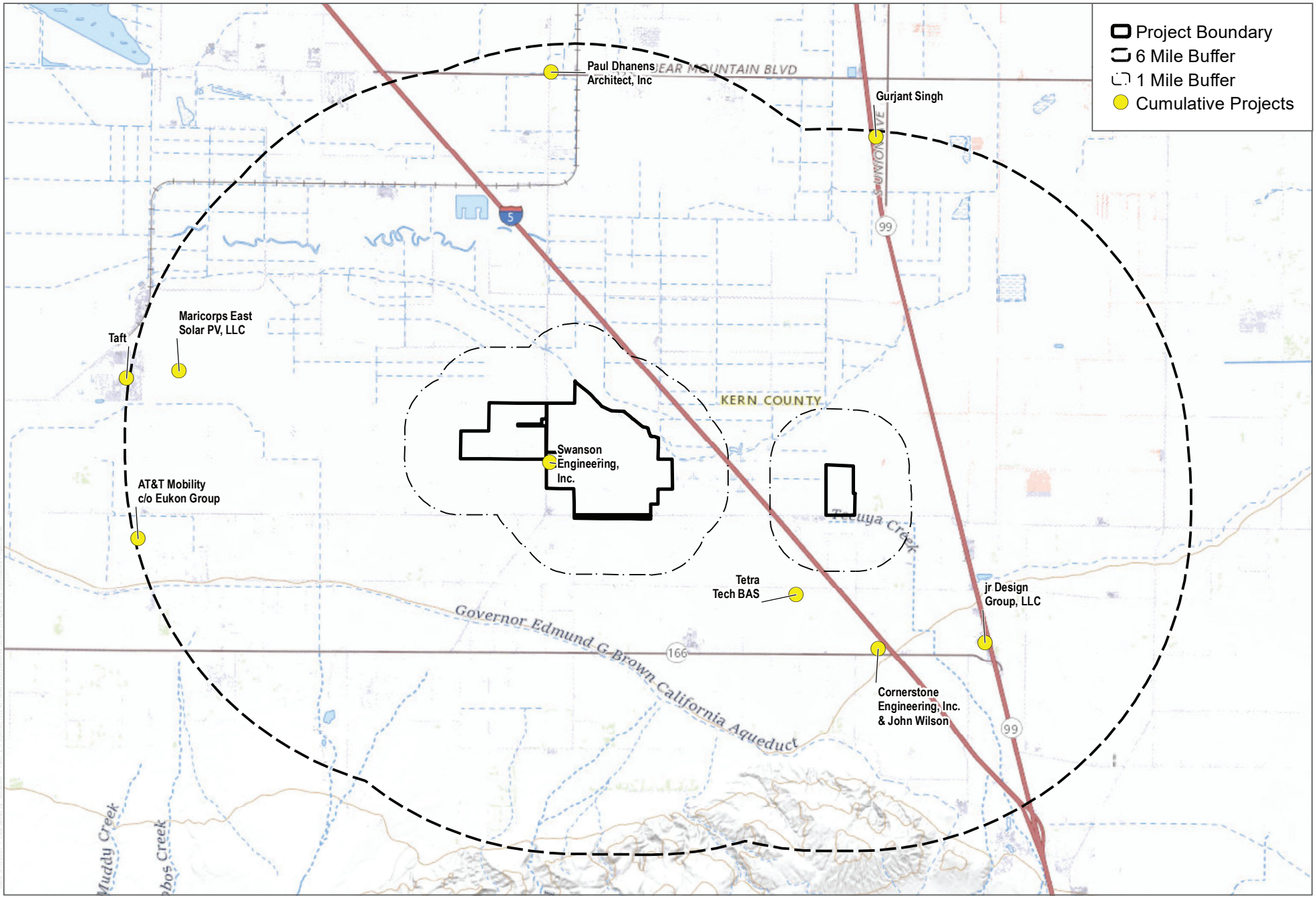
TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request/Status	Project Site APN(s)	Acreage/ Square Feet
KERN COUNTY PROJECTS – Figure 3-12						
15. Alfredo Ayon	14201 Costajo Street, Bakersfield, CA	General Plan Amendment and zone change to allow a tire shop. The application did not contain what the proposed land use designation or zoning district.	GPA / ZC	GPA, ZCC / NA	185-382-421	2.43
16. McIntosh and Associates	South of Houghton, north of Bear Mountain	A request to amend the Circulation Element	GPA	SPA / NA	185-510-11	Unknown
17. Gurjant Singh	9014 Jose Ramos Court, Bakersfield, CA	GPA, ZCC, CUP, for Ag trucking	GPA / ZCC, CUP	GPA, ZCC, CUP, Map 143-1 / NA	185-530-029	5
18. Taft	2301 Santiago Road, Taft, Ca	Waste; composting increases, and time lengthening for composting	EIR	CUP MOD / Processing	220-110-704	0
19. McIntosh Associated and Hageman Properties	Interstate 5 and Wheeler Ridge Road	An extension of time request for 2 years	CUP Extension	CUP / NA	238-081-16	Unknown
20. Cornerstone Engineering, Inc.	8632 166 HW, Mettler, CA	PD, Map 203 for Off-Site Sign	PD	PD, Map 203 / Applied	238-203-400	26.03
21. John Wilson	8632 166 HW, Mettler, CA	MOD to PD Plan. The owner desires to expand the facility with another brand of fuel and a convenience store. John R Wilson.	MOD / PD	MOD, PD, Map 203 / In Review	238-203-442	4.38
22. Tetra Tech BAS	9705 Valpredo Avenue, Mettler, Ca	Conditional use permit for a soil amendment facility.	CUP	CUP / Applied	238-211-072	18.94
23. Junior Design Group, LLC	1835 West Mettler Frontage Road, Mettler, CA	Truck repair	ZCC	ZCC, Map 203-1 / Applied	238-281-083	1.21

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request/Status	Project Site APN(s)	Acreage/ Square Feet
KERN COUNTY PROJECTS – Figure 3-12						
24. Tejon Grapevine LLC	Unknown	Proposed mixed-use planned community allowing up to 12,000 residential dwelling units, 5,100,000 sq ft of commercial/industrial floor area, 157 acres for schools, and 96 to 112 acres for parks.	EIR	GPA, SPA, ZCC, AgPresExcl / Applied	238-390-066	161.12
25. Maricorps East Solar PV, LLC	12866 Copus Road, Maricopa, CA	ADD to EIR: Solar/Wind; CUP for 170 MW Solar Facility on 1,134.5 acres	EIR / CUP	CUP / Processing	295-040-307; -315	651.2
26. Swanson Engineering, Inc.	27300 Old River Road, Bakersfield, CA	CUP for EOT of Ag Trucking Facility	CUP	CUP 26, Map 160 / Applied	295-130-397	9.55
27. Maricorps East Solar PV, LLC.	12866 Copus Road, Maricopa, CA	ADD to EIR: Solar/Wind; CUP for 170 MW Solar Facility on 1,134.5 acres	CUP	CUP / Processing	295-130-819; -827; -835	1,134.5
28. AT&T Mobility c/o Eukon Group	7.5 miles west of Old River Road on the south side of Copus Road	CUP for 150-foot-tall Lattice Wireless Facility	CUP	CUP, Map 188 / Applied	295-150-346	160
29. Pastoria Solar Energy	Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively.	CUP for 115 MW Solar with 80 MW BESS	CUP	CUP / Review Complete	241-310-08; -10; -15; -17	650

APN = Assessor's Parcel Number; GPA = General Plan Amendment; CUP = Conditional Use Permit; MW = megawatt



SOURCE: USGS National Map 2021; CA Dept of Conservation 2009

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0 6,000 12,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
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General Plan Amendment No. 3, Map No. 160
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Williamson Act Land Use Cancellations

FIGURE 3-12
Cumulative Projects
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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Chapter 4
Environmental Setting, Impacts, and Mitigation Measures

4.1 Aesthetics

This section describes the existing visual conditions of the project site and vicinity, identifies regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Sandrini Solar Project (project).

4.1.1 Introduction

This section of the Environmental Impact Report (EIR) discusses potential aesthetic impacts associated with construction and operation of the project. Specifically, the aesthetic features of the project were reviewed to determine 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 were evaluated relative to important visual features (e.g., scenic highways and available views, scenic features) and the existing visual landscape and its users. Degradation of the visual character of the 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. To assist in the assessment of modifications to the visual setting, visual simulations of the project were created by Dudek to illustrate various views of the project available to local viewer groups and the severity of anticipated visual change. The terms and concepts used in the discussion and defined below describe and assess the aesthetic setting and impacts from the project.

Visual Concepts and Terminology

Visual or aesthetic resources are generally defined as 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. Terms used in this section are provided below:

Viewshed. 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 public park, 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). Viewers from public parks, recreational trails, and/or culturally important sites 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. For the purposes of visual assessment, the landscape is subdivided into three distance zones based on relative visibility from travel routes or observation points: foreground, middleground, and background. The foreground zone includes areas closer than 0.25 miles away, the middleground zone includes areas 0.25 miles to 3 miles away, and the background zone includes areas beyond 3 miles (FHWA 2019a).

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 on 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) 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, and 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 (e.g., high speeds on a highway, low speeds on a hiking trail, or stationary at a viewing point).

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 farther 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 in the southwestern portion of Kern County within the San Joaquin Valley. The southern end of the valley is surrounded by the Sierra Nevada range to the east, the Tehachapi and San Emigdio Mountains along the south, and the Temblor Range (part of the Coastal Ranges) along the west.

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 and San Emigdio Mountains to the north, and flattens out into the San Joaquin Valley region. The landscape is mostly flat, lacking significant topographic relief, and tends to be visually monotonous because of the repetitive expanse of agricultural and extractive land uses. There is little variety of vegetative cover, and grazing grasses, croplands, solitary trees, and residential landscaping tend to dominate.

Although there are few panoramic views within the San Joaquin Valley, the southern edges of the San Joaquin Valley, where the project site is located, provides views of the Tehachapi and San Emigdio Mountains to the south. These topographical elements are physiographically separated from the flat valley floor; their summits and ridgelines are important focal points throughout Kern County, and are an excellent example of how adjacent scenery can enhance the visual quality of a landscape devoid of topographic relief and contribute positively to an area's scenic quality. From certain vantage points, as a viewer nears the eastern, western, and southern edges of the valley floor, mountainous topographic features rise abruptly from the ground plane, adding visual variety and dramatic focal points; this is considered high-quality adjacent scenery.

Over the years, Kern County has experienced a great deal of urbanization, resource extraction, and renewable energy development. Urbanization has resulted in the introduction of numerous modifications into the viewshed, including residential, commercial, and industrial uses; roadways and highways; and utilities to support development. In addition, mineral, oil, and natural gas extraction activities are common to the region. Also, Kern County is a significant producer of renewable energy, including hydroelectric, wind, solar, and geothermal power generation. Resource extraction and renewable energy production have introduced many large-scale industrial facilities into the viewshed. Common visual elements include oil wells, storage tank batteries, access roads, and electrical and water conveyance infrastructure that tend to dominate the visual landscape in the western valley.

Although urbanization and utility-scale development within Kern County have resulted in the development of 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 are relatively uniform, with broad, flat landscapes leading to distant mountains and interspersed with urban, rural, and industrial development in varying densities and intensities.

Local Character

The nearest populated areas to the project site are the unincorporated communities of Mettler, Kern Lake, and Arvin, which are located approximately 6 miles to the southeast, 1.5 miles to the north, and 14 miles to the northeast of the nearest boundary of the project site, respectively. The City of Bakersfield, located

approximately 18 miles to the north, is the nearest metropolitan area in relation to the project site. Other populated areas within the vicinity are the City of Taft; the unincorporated community of Millux; the unincorporated community of Weedpatch; the unincorporated community of Lamont; and the unincorporated communities of Frazier Park, Pinion Pines, and Pine Mountain Club (collectively referred to as the Mountain Communities), which are located approximately 20 miles east, 7 miles northwest, 13 miles northeast, 14 miles northeast, and 21 miles south of the project site, respectively.

Land in the local area consists largely of agriculture uses, including row crops and grazing land. For example, the general area north of the project site includes lands used for almond and pistachio farming and/or other crops (see Photo A in Figure 4.1-1, *Existing Conditions: Project Site*). The areas south and west of the project site are predominantly grazing lands (orchards also occur west of the project site and along Copus Road), and the area to the east, including lands north and south of Copus Road near Site 4, is developed with vineyards. Vineyards are shown in Photo B, Figure 4.1-1. Among the orchards in the project area is a small electrical substation (approximately 1.3 acres) that is located at the southwestern corner of the Copus Road/Schallock Road intersection (see Photo C, Figure 4.1-1). As shown in Photo C, electrical distribution lines are installed in the area and parallel Copus Road. In addition to limited paved roads and Interstate (I) 5, several rural access roads are located in the project area. Lastly, an airplane hangar consisting of a long, rectangular metallic building is located north of Copus Road and approximately 1,000 feet east of Site 3. The hangar and runway are active and support operations for Skydive San Joaquin Valley.

The immediate project area has few nearby residences (see Figure 4.1-2, *Existing Conditions: Surrounding Area*). The first nearby residence is immediately adjacent to Site 4, south of Copus Road. The second residence is immediately adjacent to Site 2, located west of Old River Road. The third residence is located north of Copus Road, approximately 0.43 miles west of Site 3.

Generally sloping to the north, elevations on the Project site range from approximately 440 feet near the southern properties to 320 feet near the northern properties. The site drains to the north toward Kern Lake Bed via a series of artificial canals and ditches. As described in more detail in Chapter 3, *Project Description*, the project site is composed of agricultural land that is either fallow or actively planted with annual row crops. There are no structures within the project boundaries.

Photo A: Agricultural lands to the east of Old River Road and north of Site 2

Photo B: Vineyards and other agricultural lands to the south of Copus Road and Site 4

Photo C: Orchards and electrical substation off Copus Road (west of Site 3)

Photo D: Active airplane hangar located north of Copus Road and east of Site 3

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

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FIGURE 4.1-1

Existing Conditions: Project Site

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Photo E: View south from Old River Road towards fallow lands on Site 2

Photo F: View northeast from Copus Road across fallow lands on Site 3

Photo G: View north from Copus Road towards primarily fallow lands on Site 3

Photo H: View northeast from Copus Road towards planted, irrigated lands on Site 4

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
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Williamson Act Land Use Cancellations

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FIGURE 4.1-2

Existing Conditions: Surrounding Area

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Scenic Highways

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System (Caltrans 2021), there are no Officially Designated State Scenic Highways within Kern County (see Section 4.1.3, *Regulatory Setting*, for more information on the State Scenic Highway Mapping System).

According to the California State Scenic Highway System Map, the nearest Eligible State Scenic Highway is a section of State Route (SR) 166 located within San Luis Obispo County, approximately 25 miles southwest of the project site. The eligible portion of SR-166 begins at post mile 8.9 in Santa Barbara County and ends at post mile 74.7 in San Luis Obispo County. The nearest Officially Designated State Scenic Highway to the project site is SR-33 (Maricopa Highway) in Ventura County, which is located more than 28 miles southeast of the project site. The designated scenic portion of SR-33 begins at post mile 6.4 near Wheeler Springs and ends at post mile 36.8 at the Santa Barbara County line. The project site is separated from SR-33 by several hills and mountain ranges, including the Caliente and La Panza Ranges and the San Emigdio Mountains.

In addition to the State Scenic Highway Mapping System, the Kern County General Plan Circulation Element designates local scenic routes within Kern County 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. The Kern County General Plan Circulation Element identifies several local scenic routes within Kern County; however, none of the local scenic routes (i.e., along State Route 14 and State Highway 395, State Route 58, and State Route 41) are in proximity to the project site (County of Kern 2009).

The Kern County General Plan Program EIR identifies I-5 as a scenic route. Although local scenic routes are not considered officially designated by the state and are not analyzed below, they are described for informational purposes. Specifically, the scenic segment of I-5 is identified as beginning "at the south end of the San Joaquin Valley, up through Grapevine Canyon and through Lebec, Frazier Park, Cuddy Valley, Pine Mountain Club and the Bitter Creek National Wildlife Refuge before descending Grocer Grade to Maricopa" (County of Kern 2004). The locally designated scenic segment of I-5 is approximately 16 miles southeast of the project site, beginning near the Grapevine on I-5, extending south to Frazier Mountain Park Road, and continuing west to SR-33 where it turns north and ends in Maricopa. Lastly, as part of the Kern County General Plan Circulation Element goals, policies, and implementation measures, the County of Kern adopted a Scenic Corridor Combining District to designate areas that contain unique visual and scenic resources as viewed from a major highway or freeway (County of Kern 2009). The project site is not within a Scenic Corridor Combining District.

Lighting Environment

The project site currently consists of agricultural land for grazing, with no existing site lighting. Existing residences in the surrounding areas generate a minimal amount of light, largely from building or outdoor lighting. There is minimal off-site lighting beyond small fixtures for individual structures, including agricultural support buildings and residences. Such structures are found throughout the site vicinity. There is no local roadway lighting, such as streetlights and traffic signals. Additionally, no sources of daytime glare occur on the site. As such, daytime glare conditions are minimal, being generally limited to sunlight reflecting from agricultural support structures, on- and off-road vehicles, holding ponds, and water retention basins.

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 2% 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 systems. Concentrated solar power systems typically use an array of mirrors to reflect sunlight to heat water or other fluids to create steam that turns an electric generator (Palmer and Laurent 2014).

Despite their low potential to create glare, PV panels can reflect sunlight skyward toward the light source, creating a potential glare impact for motorists or 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 their 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, solar arrays, 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. Potential effects on eastbound motorists on roads near the project site would likely be greatest in the early evening hours when the sun is at its lowest arc in the western horizon. Potential glare effects would have its greatest impact on westbound travelers in the early morning hours when the sun is rising in the east.

4.1.3 Regulatory Setting

Federal

The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and/or scenic qualities (FHWA 2019a). There are no National Scenic Byways or All-American Roads within the vicinity of the project site (FHWA 2019b).

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 Officially Designated State Scenic Highways within Kern County, and the project site is not located directly adjacent to any Eligible State Scenic Highway. The closest section of highways eligible for a state scenic highway designation is SR-166 and SR-33, east of the Cuyama River in San Luis Obispo County (near the border with Santa Barbara County). As discussed above, the project site is located approximately 25 miles northeast of these Eligible State Scenic Highways.

Local

Kern County General Plan

The Land Use, Open Space, and Conservation Elements of the Kern County General Plan evaluate 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 (County of Kern 2009).

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 that 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 and to what extent development has encroached on the scenic views. The County of Kern 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 of Kern to further develop its Scenic Route program, and measures to protect scenic resources (County of Kern 2009), which are not applicable to the 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 Kern County. Route 1, which begins north of Mojave and continues to the Inyo County Line, consists of SR-14 and State Highway 395. Route 2 consists of SR-58 between Mojave and Boron. Route 3 consists of 5 miles of SR-41 in northwest Kern County (County of Kern 2009). The project site would not be visible from any of these routes.

The Kern County General Plan Circulation Element also identifies several local scenic routes within Kern County (County of Kern 2009); however, none of the local scenic routes (i.e., along SR-14 and State Highway

395, SR-58, and SR-41) are in proximity to the project site. The Kern County General Plan Program EIR does identify I-5 as a scenic route, and lists the sites of interest near this route, including the Edmonston Pumping Plant, Sebastian Indian Reservation, Fort Tejon, Top of Grapevine Pass, Frazier Park, Big Trees, Mt. Cerro Noroests (Mt. Abel), and Bitter Creek National Wildlife Refuge (County of Kern 2004).

The Kern County General Plan provides general goals and policies for design features of development projects to reduce their impacts to scenic resources. The policies and implementation measures in the Kern County General Plan for aesthetic resources applicable to the project are provided below. The 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 General Plan are incorporated by reference (County of Kern 2009).

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 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 5: Energy Element

5.4.7: Transmission Lines

Goal

Goal: 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

The Kern County Zoning Ordinance designates the project site as Zone A (Exclusive Agriculture) under the County of Kern's Zoning Classification. Surrounding areas up to 5 miles from the project site are also zoned as "A – Exclusive Agriculture." According to Kern County Zoning Ordinance Section 19.12.030 G, solar energy electrical generators, when not accessory to a permitted or conditionally permitted use, are permitted within the A Zone District subject to the approval of a Conditional Use Permit.

Chapter 19.81: Dark Skies Ordinance (Outdoor Lighting)

In November 2011, the County of Kern approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing dark sky 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 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 were evaluated using a variety of assessment methodologies and resources. Generally, the potential aesthetic, light, and glare impacts associated with project development were evaluated on a qualitative basis. This visual impact assessment is being used to identify and assess any potential long-term adverse visual impacts on aesthetics and visual resources that may result from construction and operation of the project. Although federal agencies do not have land use jurisdiction over the project site or approval authority over the project, this assessment is loosely based on the established visual assessment practices employed by the Federal Highway Administration (FHWA 2019a), Bureau of Land Management (BLM 1986), and U.S. Forest Service (USFS 1995). This assessment method includes the following:

- 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 aerial photographs and street-level photographs (taken by Dudek), Kern County GIS topographic and land use data, and U.S. Geological Survey topographic data.

- Conducting field visits in June 2021 of the project site and vicinity to do the following:
  - Document the project site's visual characteristics.
  - Document the project vicinity's visual characteristics.
  - Establish a visual characteristic baseline.
  - Establish the location of visual (sensitive) receptors in the vicinity.
- Establishing key observation points (KOPs) within the project area 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 the California Environmental Quality Act (CEQA) Guidelines Appendix G. More detailed information on the methodology behind the selection of KOPs and rating visual quality is provided below.

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. Detailed information on the methodology behind the selection of KOPs and rating visual quality is provided below.

Selection of Key Observation Points

KOPs are public viewpoints that reflect and capture the range of views available to viewing groups in a project area. KOPs were selected as representative vantage points offering typical views to the project site, and were identified based on review of available land use data, preliminary viewshed analysis, aerial maps, and photographs. Although viewing groups in the project area are generally limited to motorists and residents, KOPs from public roads were selected for analysis. Because views from residences are private and reflect the visual experience of a single person or group of persons, they are not representative public vantage points and were not selected for further analysis.

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 available to viewers in the surrounding area. 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 the surrounding area. The familiarity with the view also influences how much attention is spent on the visual environment. For example, 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 driving to and from home.

Because the project site is located in a rural area featuring scattered rural residences, limited sensitive receptors would experience views of the project. Although project features would be noticeable to interstate and local road motorists, residents with a direct line of sight to the project site from their homes would tend

to be the most sensitive to changes in views and visual quality. Due to the permanent nature of views from homes, these residents have heightened familiarity with the existing landscape and have a high sensitivity to visual changes. Despite this high familiarity and sensitivity, views from residences are private and are not representative of views and visual experiences available to the public. Because of this, residences were not selected as KOPs; however, nearby locations on public roads offering similar views were considered and identified as KOPs.

The selected KOPs for analysis of effects to existing visual character, quality, and views are depicted in Figure 4.1-3, *Key Observation Points*, and provided in more detail in Figure 4.1-4, *Key Observation Point 1: Existing and Simulated View from KOP 1 – Old River Road Toward the Project Site (Site 2)*; Figure 4.1-5, *Key Observation Point 2: Existing and Simulated View from KOP 2 – Copus Road Toward the Project Site (Site 3)*; and Figure 4.1-6, *Key Observation Point 3: Existing and Simulated View from KOP 3 – Interstate 5 Toward the Project Site (Site 3)*. They are also described in Table 4.1-1, *Key Observation Points*.

TABLE 4.1-1: KEY OBSERVATION POINTS

KOP	Location	Representative Viewer Groups
1	From the intersection of Old River Road and residential driveway looking south toward the project site (approximately 0.4 miles away)	Southbound Old River Road motorists and nearby residents
2	From Copus Road looking northwest toward the project site (approximately 0.4 miles away)	Westbound Copus Road motorists on approach to the project site and nearby residents
3	From Interstate 5 near Ashe Road looking southwest toward the project site (0.7 miles away)	Southbound I-5 motorists passing near the project area

Simulation Preparation

Visual simulations of the project from the identified KOPs were prepared to provide a pre- and post-project visual setting comparison, as well as provide context for qualitative description of the visual changes anticipated to result from project implementation. Photographs from KOPs were taken during site visits conducted in June 2021, and simulations were prepared by Dudek using the assumptions and methodologies listed in Table 4.1-2, *Visual Simulation Methodology and Assumptions*.

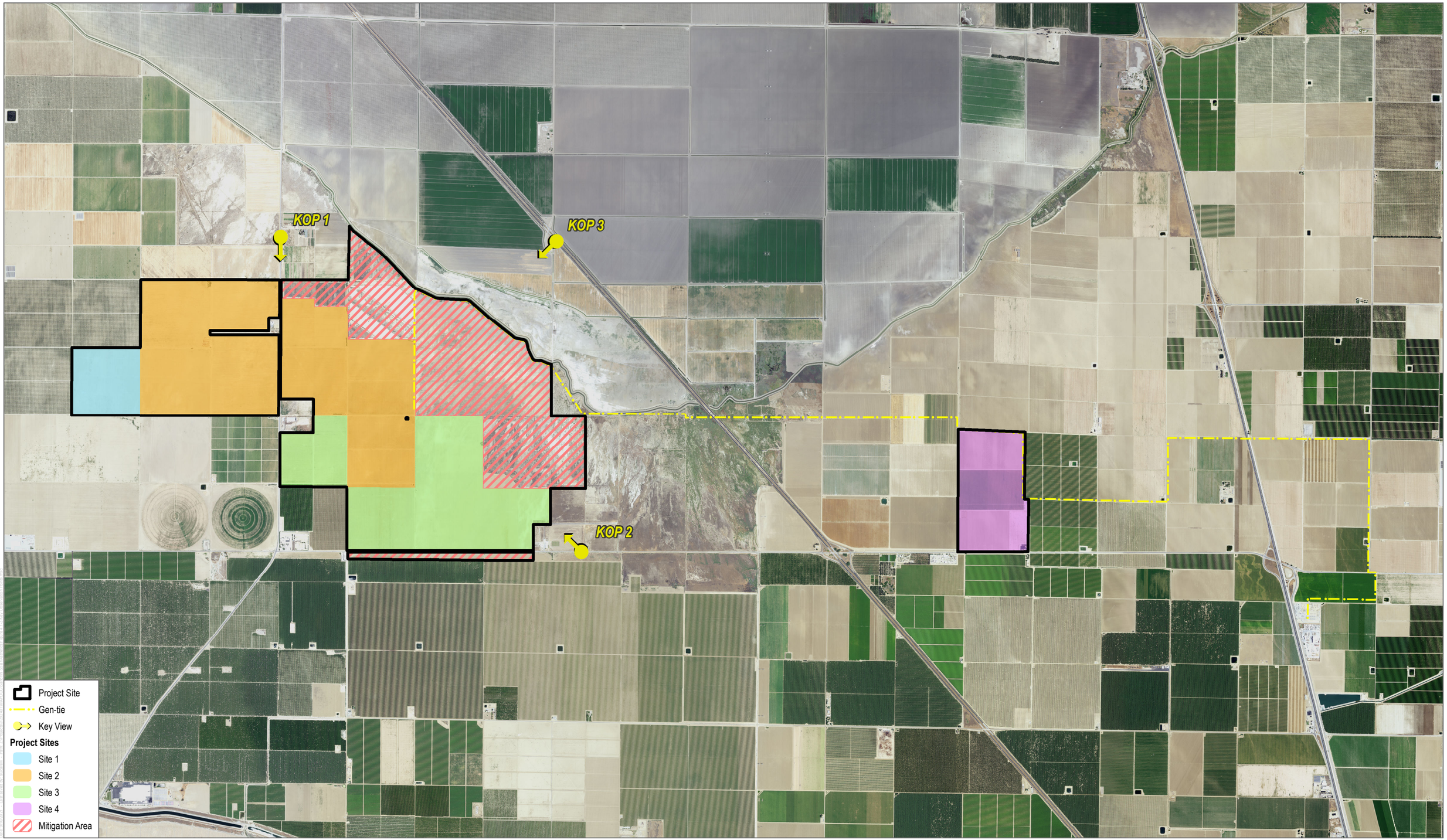
TABLE 4.1-2: VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS

Photography from Key Observation Points (KOPs)	• Photos were taken on clear days with limited hazy atmospheric conditions in June 2021. • An Apple iPhone SE (2nd generation) with a 28 mm focal length (35 mm focal length equivalent) was used.
Visual Simulation Assumptions	• Solar modules would be approximately 8 feet with a maximum height of up to 12 feet in height and separated by approximately 23 feet. • Modules on a single-axis tracking system were used to show the worst-case visual impact. • One substation is included, covering an area of 250 feet by 350 feet. • Substation and battery energy storage system elements are typically 23 feet wide by 5 feet long by 8 feet high. • Gen-tie line poles were simulated using a conservative maximum height of approximately 150 feet. • Chain-link fencing would be 7 feet in height, including 6 feet of chain-link topped by 1 foot of triple-strand barbed wire.

TABLE 4.1-2: VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS

	• Module setbacks would be 24 feet to 61 feet from Old River Road and 40 feet to 63 feet from Copus Road.
Methods	Following data gathering phase, the development of visual simulations began with a determination of proposed KOPs. Upon review and approval of KOPs by the Kern County project planner, Dudek field staff conducted the initial site visit to obtain photographs. This included identification of reference points with GPS coordinates and specific fields of vision for each view. Concurrently, the visual simulation team developed a computer model of the project to illustrate the project's appearance from different points of view. Upon completion of the 3D modeling phase, realistic materials, maps, and textures were applied. The next phase consisted of insertion of modeling into photographs taken during the site visit. During this process, a computer model camera was aligned with the on-site photography to depict the project setting and project features within each view.

A comparison of existing views from the KOPs using visual simulations depicting visible project features aided in the determination of project-related impacts. The simulations present a representative sample of the existing landscape setting, as well as an illustration of how the project may appear from the identified KOPs. Regardless of the manufacturer, solar arrays on single-axis tracking systems are typically visually similar.



SOURCE: USDA 2020

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

DUDEK

0 1,750 3,500 Feet

FIGURE 4.1-3
Key Observation Points
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 4.1-4

Key Observation Point 1: Existing and Simulated View from KOP 1 - Old River Road Toward the Project Site (Site 2)

Kern County Planning and Natural Resources Department

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Case Numbers:

Conditional Use Permit No. 9, Map No. 159	General Plan Amendment No. 2, Map No. 159
Conditional Use Permit No. 27, Map No. 160	General Plan Amendment No. 3, Map No. 160
Conditional Use Permit No. 28, Map No. 160	General Plan Amendment No. 4, Map No. 161
Conditional Use Permit No. 29, Map No. 160	Williamson Act Land Use Cancellations
Conditional Use Permit No. 27, Map No. 161	

FIGURE 4.1-5

Key Observation Point 2: Existing and Simulated View from KOP 2 - Copus Road Toward the Project Site (Site 3)

Kern County Planning and Natural Resources Department

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Case Numbers:

Conditional Use Permit No. 9, Map No. 159	General Plan Amendment No. 2, Map No. 159
Conditional Use Permit No. 27, Map No. 160	General Plan Amendment No. 3, Map No. 160
Conditional Use Permit No. 28, Map No. 160	General Plan Amendment No. 4, Map No. 161
Conditional Use Permit No. 29, Map No. 160	Williamson Act Land Use Cancellations
Conditional Use Permit No. 27, Map No. 161	

FIGURE 4.1-6

Key Observation Point 3: Existing and Simulated View from KOP 3 - Interstate 5 Toward the Project Site (Site 3)

Kern County Planning and Natural Resources Department

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Rating Visual Quality

"Visual quality" is a measure of a landscape or view's visual appeal. Although there are a number of standardized methods for rating visual quality, the "Scenic Quality Rating Criteria" method used by the Bureau of Land Management is referenced and relief upon here 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 methodology, visual quality is rated according to the presence and characteristics of seven key components of the landscape. These components are listed and described below (BLM 1986):

1. The ***landform*** component of the visual quality rating criteria establishes 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 natural 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).
3. The ***water*** component of the rating criteria recognizes that visual quality is largely tied to the presence of water in scenery, because it is that element that contributes 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 colors of the basic components of the landscape (e.g., lands, vegetation). 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 considers the degree to which scenery outside the assessed area enhances the overall impression of the scenery under evaluation. The distance of influence for adjacent scenery normally ranges from 0 to 5 miles, depending on the characteristics of the topography, the vegetation cover, and other 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 increase 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 considers built modifications to the landform, water, vegetation, and/or the addition of human-constructed 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 Bureau of Land Management's rating system, a total of 32 points is possible (BLM 1986). Views that score 19 points or more are typically considered very high in visual quality. Views that score 16 to 18 points are typically considered to have a high level of visual quality. Views that score 12 to 15 points are typically considered to have an above-average level of visual quality. Views that score 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.

TABLE 4.1-3: VISUAL QUALITY RATING SYSTEM

Key Factor	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 that 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 introduce no discordant elements.	Modifications add variety but are very discordant and promote strong disharmony.
	Score 2	**Score 0**	**Score -4**

SOURCE: BLM 1986

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

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 human-built features within a landscape do not necessarily detract from the scenic value. In fact, certain built features that complement the natural landscape may actually enhance the visual quality. In making this determination, it is important to assess a project's 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 2 points or more, but can be reduced to fewer than 2 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 1 point or fewer. In a 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 a visual impact analysis, there is no impact if the project's potential visual modifications cannot be seen from an identified sensitive viewpoint.

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 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.

As previously defined, scenic vistas are typically areas identified or known for high scenic quality. Although scenic vistas may be designated as such by a federal, state, or local agency, they can also include an area that is signed and accessible to the public for the express purposes of viewing and sightseeing.

There are no designated federal, state, or local scenic areas (or vistas) near the project site. Managed by the Wildlands Conservancy, the Wind Wolves Preserve is an approximately 30-square-mile area that includes several campgrounds and trails, the closest of which (the 1-mile-loop Wildflower Trail or Spring Wildflower Trail) is located more than 7 miles southwest of the project site. None of the trails in the preserve have been specifically designated as scenic vistas; however, the area is considered scenic due to its available range of landforms and habitats. Due to distance, development of a solar facility on the project site would not block available views from Wind Wolves Preserve trails. Although located near the base of San Emigdio Mountains and situated on an elevated landform in relation the project site, the distance between the project site and trails within the Wind Wolves Preserve would result in limited distant views of colors and lines displayed by low-profile project components. Distance and intervening topography, lands, and development, including agricultural fields and limited agricultural and residential structures, would result in the project creating less-than-significant impacts on the north- and northeast-oriented views available from the Wind Wolves Preserve.

The nearest formal park, Felecita Park, is located more than 20 miles northeast of the project site in the community of Arvin. Because the park is surrounded by two-story residential development to the east and west, and due to the distance between the park and the project site, development of the project would likely produce no noticeable impact to views from Felecita Park. Therefore, impacts to scenic vistas from the park would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be 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.

The project would not be visible from any Officially Designated State Scenic Highway. The nearest Eligible State Scenic Highway, a segment of SR-166, is located within San Luis Obispo County, approximately 25 miles southwest of the project site. The eligible scenic portion of SR-166 begins at post mile 8.9 in Santa Barbara County and ends at post mile 74.7 in San Luis Obispo County. The nearest Officially Designated

State Scenic Highway to the project site is SR-33 (Maricopa Highway) in Ventura County, which is located more than 28 miles southeast of the project site. The designated scenic portion of SR-33 begins at post mile 6.4 near Wheeler Springs and ends at post mile 36.8 at the Santa Barbara County line. Due to distance and intervening terrain, the project site is not visible from the eligible scenic segment of SR-166 and is not visible from the designated scenic portion of SR-33. Therefore, construction and operation of the proposed project would not change the viewshed from any officially Designated or Eligible State Scenic Highway, and impacts would be less than significant.

The Kern County General Plan Program EIR identified I-5 as a scenic route (County of Kern 2004), and the locally designated scenic segment of this route is approximately 16 miles southeast of the project site near the Grapevine. Although distant views to the project site may be available to southbound I-5 motorists as they approach the Grapevine, views would be limited to the presence of intervening topography. In addition, distance would reduce perceptible visual change on the project site such that colors and lines displayed by project components would not be distinct or overly noticeable. Thus, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be 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.

As stated in Chapter 3, *Project Description*, and in Section 4.1.2, *Environmental Setting*, the project site comprises primarily flat terrain, currently used for agricultural operations and/or designated for agricultural use. Further, land uses in the surrounding area largely consist of scattered residences and agriculture uses with a mix of row crops and grazing land. Because the project site is within a non-urbanized area, the analysis presented below focuses on whether proposed development would substantially degrade the existing visual quality and character of public views of the site and its surroundings.

Construction

Construction of the project would take place in multiple phases over 12 to 18 months. During this timeframe, activities including grading, installation of steel piles for solar arrays, trenching for underground cables, installation of inverters and battery racks, and construction of the generation tie-line (gen-tie line) would occur. Up to approximately 650 workers would be needed during the project's construction phase. As a result of these activities and the influx of vehicles and persons in the project area, construction would result in temporary changes to existing views and visual quality. For example, existing views across the project site consist of a relatively inactive landscape altered by previous grading activities and/or agricultural practices. During construction, areas of the project site would be activated by construction processes, vehicles, and personnel, and the installation of project components, which would occur over

time. Existing visual quality would also be altered due to modification of the landscape and the influx of vehicles, equipment, and workers. These elements would create noticeable contrast when viewed in the context of off-site agricultural lands. However, and despite the degree of perceptible visual change and altered views, construction activity would be temporary (occurring over 12 to 18 months) and would be localized as activities progress across the project site. Further, the visual change associated with isolated activities would be experienced temporarily, and similarly, the presence of construction vehicles, equipment, and workers would be temporary (and spatially limited) within the visual landscape of the project area. Therefore, due to the temporary nature of construction and the spatial limitation of visual effects associated with construction activities, construction impacts to existing visual character and views of the project site and surroundings would be less than significant.

Operation

In addition to consideration of project bulk, scale, and complexity, visual simulations of post-development conditions were compared against the existing visual setting to determine whether the project would substantially degrade the existing visual quality and character of the project site. To document and illustrate anticipated visual change, KOPs were selected for visual simulation. The selected KOPs are representative of views to the project site available to the primary viewer groups (i.e., motorists and residents) in the surrounding area.

As proposed, the project would introduce solar generators and associated infrastructure onto four sites (Sites 1 through 4) within the approximately 3,470-acre project site. In addition to solar generators, project components would include battery energy storage structures, two collector substations, two gen-tie lines with guy-wires on the poles, an operations and maintenance (O&M) building, fencing (6- to 8-foot-high chain-link), and access roads. Because solar generators and fencing would be located nearest to area roads, these components would be most visible to local viewers. Also, due to their height, poles supporting gen-tie lines would be noticeable to viewers. The battery energy storage system, substation, and O&M building would include vertical components that would be taller than typical homes and crops in the area; however, these components would be located interior on the project site and would be set back from the nearest roadways. Therefore, although visible, components including battery energy storage structures (23 feet wide by 5 feet long by 8 feet high), substation racks and poles, and the prefabricated O&M building are anticipated to be secondary visual features to solar generators, fencing, and gen-tie line infrastructure.

As described in Table 4.1-2, solar modules (maximum height from ground to panel edge of 12 feet) would be installed on a single-axis tracking systems that would be introduced across Sites 1 through 4. Each panel would allow for sufficient clearance between the bottom edge of the panel and the ground for general accessibility and maintenance vehicle movement.

Existing views and the anticipated visual change associated with the project as experienced from the KOPs are described below for each KOP. Each discussion is followed by an exhibit illustrating the existing and post-development view, and a table that presents a numerical (and descriptive) comparison of existing and proposed conditions. The anticipated severity of impacts at each KOP is noted in the KOP description and comparative visual quality tables.

KOP 1 shows the view from the intersection of a residential driveway and southbound Old River Road (see Figure 4.1-4, *KOP 1: Old River Road Looking South Toward the Project Site (Site 2)*). KOP 1, which is representative of views to the project site available to residents and motorists, is located approximately 2,020 feet north of the project site, and more specifically, the northern boundary of Site 2. The existing

view from KOP 1 depicts a paved road (Old River Road), visible dirt depression (ditch), and dirt access road that parallel the paved road. A white, underground utility marker teeters in the foreground, and a distribution line supported by tall wood poles is aligned parallel to the northbound travel lane of Old River Road. Light grasses and reddish-grey shrubs are scattered across the tan soil landscape, and several clusters of trees with green foliage are visible to the southwest. Several lightly colored, rectangular structures are detectable to the south, and distant green agricultural croplands are dwarfed by rugged, light to dark colored hills and mountains in the background.

The post-development view from KOP 1 (see Figure 4.1-4) would include solar generators on Site 2 west of Old River Road. Due to distance between Site 2 and KOP 1, solar generators would not be distinct and would be experienced as a low, greyish, and rectangular band of color in the middleground (i.e., greater than 0.25 miles but less than 3 miles) landscape. The solar generators would create contrast with the tan colors of the foreground, but due to darker tones in the middleground and background, contrast would be somewhat moderated. However, as discussed in Table 4.1-4, *Visual Quality Rating Analysis – KOP 1*, the post-development score is 10 and the pre-development score is 14. Because the difference in scores would be 4 points, visual impacts from KOP 1 would be potentially significant.

TABLE 4-1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1 – OLD RIVER ROAD

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
Landform	*Score:* 4 *Explanation:* Flat terrain in the foreground with hills and rugged mountains in the background. Tan hills to the south are seemingly "capped" by darker slopes and ridgelines that create the horizon.	*Score:* 4 *Explanation:* As viewed from KOP 1, development of solar arrays would not visibly modify local topography/landforms.	0	No Impact
	Detail: The foreground and middleground landscape are marked by flat agricultural lands. To the south, the flat terrain rises to a wall of hills and mountains. Although not visually prominent, low-profile solar arrays would be detectable in the middleground and would create a visible line separating flat, tan, and dark green terrain. The project would not substantially modify existing landforms in the KOP 1 landscape.			
Vegetation	*Score:* 3 *Explanation:* Scattered shrubs in the immediate foreground; several mature trees in the middleground border irrigated agricultural land to the south.	*Score:* 3 *Explanation:* The development of solar arrays would occur on fallow agricultural fields to the south, and removal of vegetation would not be visible from KOP 1.	0	No Impact
	Detail: Removal of vegetation would be minor or not be evident as viewed from KOP 1.			
Water	*Score:* 0 *Explanation:* There is no visible water in the KOP 1 landscape.	*Score:* 0 *Explanation:* There is no visible water in the landscape and the	0	No Impact

TABLE 4-1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1 – OLD RIVER ROAD

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
		project would not introduce water to the project area.		
	Detail: Existing and post-development views do not include water features. Therefore, no impacts to water features would occur.			
Color	*Score: 3* *Explanation:* Foreground and middleground terrain are marked by earth tones, including tan, brown, and light and dark green. Light-colored structures in the middleground transitions to dark green vegetation and then to distant tan hills and dark green mountains.	*Score: 2* *Explanation:* Dark grey/blue band of color displayed by solar arrays would be visible on the project site; however, the dark color would be low in the landscape and would not be dominant.	-1	Less than Significant
	Detail: Foreground and middleground landforms and vegetation are marked by tan, brown, and green colors with white associated with visible agriculture buildings. Solar arrays would be relatively distant in the middleground and would display a low, rectangular band of dark grey/blue color that would contrast with the prevalent earth tones in the landscape. Still, due to distance and low profile, color contrasts associated with solar arrays would be weak.			
Adjacent Scenery	*Score: 3* *Explanation:* Views are moderately enhanced by hills and rugged ridgelines in the background.	*Score: 2* *Explanation:* Although project development would not block views to hills and mountains, the introduction of a continuous dark line associated with solar arrays would slightly interrupt views that transition between the foreground and background.	-1	Less than Significant
	Detail: Views to hills and mountains would not be significantly modified by the introduction of solar arrays to the KOP 1 landscape.			
Scarcity	*Score:* 2 *Explanation:* The view contains no particularly unique or unusual features. Hills and mountains add interest but are visible and common throughout the local area.	*Score: 1* *Explanation:* The landscape would be slightly modified by the introduction of solar arrays in the middleground.	-1	Less than Significant

TABLE 4-1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1 – OLD RIVER ROAD

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
	Detail: Views of hills and mountains are available in the surrounding area and are not unique to KOP 1. In addition, project development would not substantially alter the availability of hill and mountain views in the project area.			
Cultural Modifications	*Score:* -1 *Explanation:* Paved roads; agricultural lands; distribution lines and poles; utility markers; and white, rectangular structures are visible in the foreground-middleground landscape.	*Score:* -2 *Explanation:* Although visible, solar arrays would be distant and would lack detail as experienced from KOP 1.	-1	Less than Significant
	Detail: Existing cultural modifications include electrical distribution lines and poles, utility marker, agricultural buildings, and paved and dirt roads. Solar arrays would be located in the middleground, approximately 0.40 miles south of KOP 1. The low and dark band of color displayed by the solar arrays would attract attention and create form, line, and color contrasts.			
Totals:	***14***	***10***	***4***	**Potentially Significant**

NOTE: Existing conditions and post-development simulated views are depicted in Figure 4.1-4

KOP 2 depicts views from westbound Copus Road approximately 1.85 miles west of I-5 (see Figure 4.1-5, *KOP 2: View from Copus Road Toward the Project Site (Site 3)*). The KOP is situated on Copus Road and near the driveway to a single residence. Therefore, KOP 2 is representative of views available to motorists and the nearest residence east of Site 3 (located approximately 0.35 miles away). As shown in the existing conditions photograph (see Figure 4.1-5), the view from KOP 2 is dominated by relatively flat and fallow agricultural lands in the foreground that extend into the middleground viewing distance. Low ruderal vegetation is visible in the immediate foreground, and non-native grasses generally cover the middleground landscape. A light-colored, rectangular building (approximately 35 feet high) is located to the west and functions as an airplane hangar for a local skydiving operation. Several tall and wooden utility poles cross the middleground landscape from south to north and become faint to the northwest. A low line of green trees is visible in the middleground to the northwest.

The post-development view from KOP 2 (see Figure 4.1-5) would include solar generators on Site 3 that would stretch across the site from south to north. In addition, the on-site substation, O&M building, and several poles supporting the project gen-tie line would be faintly visible in the KOP 2 landscape. Compared to the visual experience of solar generators at KOP 1, at KOP 2, details of solar generators would be slightly more apparent because panel edges would occasionally be visible. Still, solar generators would be experienced as a relatively low, horizontal band of dark grey/blue color in the middleground. As shown in the visual simulation (see Figure 4.1-5), solar generators would create noticeable contrast with the predominant tan colors of the foreground, and due to the lack of dark colors in the background, solar

generators would result in the introduction of a hard horizontal line to KOP 2 view. Lastly and as discussed in Table 4.1-5, *Visual Quality Rating Analysis – KOP 2 Copus Road*, the post-development score is 3 and the pre-development score is 7. Because the difference in scores would be 4 points, visual impacts from KOP 2 would be potentially significant.

TABLE 4-1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2 COPUS ROAD

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
Landform	*Score: 2* *Explanation:* Flat terrain in the foreground stretches to the background distance. Silhouettes of distant hills and mountains are detectable but are not visually prominent (mountain terrain is faint and hazy due to local atmospheric conditions).	*Score:* 1 *Explanation:* From KOP 2, introduction of solar generators would result in blockage of distant foothills and lower hills. On clearer days with less atmospheric hazy, view blockage would be more visible than as depicted in Figure 4.1-5.	-1	Less than Significant
	Detail: Flat agricultural lands extend across the foreground and middleground landscape. The faint silhouette of generally low hill and mountain terrain is detectable in the distance to the west and northwest. A continuous band of solar generators would be introduced in the middleground and would extend from south to north across Site 3. Faint lines associated with the gen-tie line and on-site substation would also be seen at KOP 2 (substation racks and bays would be "lower" in the landscape than gen-tie line poles and would be "behind" the visible line of solar generators at KOP 2). As experienced from KOP 2, the project would result in detectable blockage of distant (and faint) foothills and lower hills that would result in reduced visual quality compared to existing conditions.			
Vegetation	*Score:* 1 *Explanation:* Ruderal, weedy vegetation in the immediate foreground and extending to the middleground. A noticeable cluster of dark green vegetation/trees is visible to the northwest in the middleground.	*Score:* 0 *Explanation:* Although the introduction of solar generators would not modify foreground vegetation, solar generators would require the removal of the noticeable cluster of dark green vegetation/trees in the middleground. As a result, visible vegetation would be slightly less varied compared to existing conditions.	-1	Less than Significant

TABLE 4-1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2 COPUS ROAD

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
	Detail: While the existing condition includes a lack of vegetation variety, removal of vegetation would be noticeable and would result in a reduction in visible variety of vegetation in the landscape.			
Water	*Score:* 0 *Explanation:* There is no visible water in views from KOP 2.	*Score:* 0 *Explanation:* No water is visible from KOP 2 and the project does not include water features.	0	No Impact
	Detail: Water features are not included in pre-development or post-development views/conditions.			
Color	*Score: 3* *Explanation:* Landforms in the foreground and middleground display tan, brown, and green tones but altogether there is little variety in landform and vegetation color. Visible development consists of the nearby airplane hangar, and electrical distribution line poles contribute light/off-white and dark brown color to the KOP 2 scene.	*Score: 2* *Explanation:* The introduction of dark solar arrays would replace darker green tones display by on-site vegetation in the middleground. The dark solar arrays would create a hard line in the landscape that would attract attention in KOP 2 views. Color contrast would be noticeably altered with project operations.	-1	Less than Significant
	Detail: Tan, brown, greens, and off-white associated landform, vegetation, and development occur in the foreground and middleground of the KOP 2 landscape. Solar arrays in the middleground would be experienced as a low, rectangular band of dark grey/blue color that would visibly contrast with the dominant earth tones in the landscape. Color contrasts associated with solar arrays would be moderate.			
Adjacent Scenery	*Score: 1* *Explanation:* The faint silhouette of distant mountain terrain has little influence on overall low visual quality.	*Score: 0* *Explanation:* Solar generators would block distant (and faint) foothills and hills from view and result in reduced topographical variety in the visible landscape.	-1	Less than Significant
	Detail: While faint and sitant, the lower portions of hills and mountains would be blocked by the introduction of solar arrays to the KOP 2 landscape.			
Scarcity	*Score: 1* *Explanation:* The view contains no particularly unique or unusual features.	*Score: 1* *Explanation:* The landscape would be modified by the	0	No Impact

TABLE 4-1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2 COPUS ROAD

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
		introduction of solar arrays, gen-tie line infrastructure, a substation, and energy storage components in the middleground.		
	Detail: Views of distant hills and mountains are faint but available and are not unique to KOP 2. Although project development would not substantially alter the availability of hill and mountain views in the project area, it would result in visible view blockage to these features at KOP 2.			
Cultural Modifications	*Score:* 0 *Explanation:* In addition to agricultural lands, electrical distribution infrastructure and the tall and long airplane hangar in the foreground-middleground create visible contrast with landforms. However, the off-white structure is generally consistent with the dominant fallow lands and agricultural character of the KOP 2 landscape.	*Score:* -1 *Explanation:* Although visible, solar arrays would be distant and would lack detail as experienced from KOP 1.	-1	Less than Significant
	Detail: Existing cultural modifications include electrical distribution infrastructure, previously graded agricultural lands, paved and dirt roads, and an aged airplane hangar. Solar arrays would be introduced in the middleground, approximately 0.40 miles west of KOP 2. Panels installed closest to Copus Road on Site 3 would be blocked by the airplane hangar structure; however, as shown in Figure 4.1-5, a hard line created by solar panels extending north beyond the hangar would be evident and would create visible color, line, and form contrasts in the landscape. The dark band of color displayed by the solar arrays would attract attention, yet the low-profile, horizontal form of arrays would generally be consistent with the low, horizontal form of foreground and middleground terrain.			
Totals:	***7***	***3***	***4***	**Potentially Significant**

NOTE: Existing conditions and post-development simulated views are depicted in Figure 4.1-5

KOP 3 depicts views from southbound I-5, approximately 3 miles north of Copus Road and 0.75 miles northeast of the project boundary (see Figure 4.1-6, *KOP 3 View from Interstate 5 Toward the Project Site (Site 3)*). KOP 3 is representative of views available to motorists and their passengers on I-5, which

represents the largest viewer group in the project area. The existing view from KOP 3 depicts graded and disturbed terrain in the immediate foreground that is bordered by an angular, vegetated ditch/swale that supports dense grasses and low shrubs. The ditch is bordered by slightly bermed land that briefly extends to the west and then transitions to light green grasses. Several utility markers are visible in the foreground, and a small patch of leveled, grazing land is located in the middleground and eventually bordered by distant, dark green lands consisting of irrigated agricultural lands. A structure with a light-colored angular roof is detectable in the middleground. Lastly, banded agricultural lands in the foreground and middleground are framed by distant tan hills and darker mountain slopes and ridges.

The post-development view from KOP 3 would include solar generators and gen-tie line poles on Site 3. Although less visible and somewhat faint, the metallic rack and bays of the on-site substation, and rectangular structures housing the battery energy storage component would be within the KOP 3 viewshed. As at KOP 1, at KOP 3, solar generators would be experienced as near low and horizontal, and a near continuous band of dark grey/blue color that would extend across the landscape in an alignment parallel to I-5. Tall and thin gen-tie line poles would be regularly spaced, and visibility to these features would be enhanced by the distant tan-colored hills in the background. Solar generators and gen-tie line poles would create visible contrast in the landscape as the dark colors displayed by these components would tend to stand out against the predominant tans and light greens in the landscape. As shown in Table 4.1-6, *Visual Quality Rating Analysis – KOP 3 Interstate 5*, the post-development score is 10 and the pre-development score is 15. Because the difference in scores would be 6 points, visual impacts from KOP 3 would be significant.

TABLE 4-1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3 – INTERSTATE 5

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
Landform	*Score:* 4 *Explanation:* Flat terrain in the foreground is framed by rugged hills and mountains in the background. Tan/brown hills are seemingly topped by darker mountainous slopes and ridgelines.	*Score:* 3 *Explanation:* As viewed from KOP 3, development of solar arrays would not visibly modify local topography/landforms. However, the introduction of gen-tie line infrastructure would interfere with existing views to background hills and create visible line and color contrast.	-1	Less than Significant
	Detail: The foreground and middleground landscape are marked by flat agricultural lands and are framed by prominent hills and mountains in the background. Although not visually prominent, low-profile solar arrays would be detectable in the middleground and would create a visible, dark line in the landscape. As noted above, gen-tie line infrastructure would interfere with existing views to background terrain, and would result in reduced visual quality. However, modification of landforms due to project development would not be overly evident from KOP 3.			
	Score: 3	*Score:* 3	0	No Impact

TABLE 4-1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3 – INTERSTATE 5

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
Vegetation	*Explanation:* A vegetated ditch/swale is located in the immediate foreground and irrigated agricultural are visible in the middleground, stretching to the base of distant hills. The landscape is visibly modified and contains primarily low vegetation with similar forms, textures, and colors.	*Explanation:* The development of solar arrays would occur to agricultural fields in the middleground to the west and required removal of vegetation would not be evident from KOP 3. Similarly, the installation of the gen-tie line and other components would not result in visible areas of cleared vegetation.		
	Detail: Removal of vegetation would be minor or not be evident as viewed from KOP 3.			
Water	*Score:* 0 *Explanation:* There is no visible water in the KOP 3 landscape. A vegetated swale/ditch is located in the foreground, but the presence of standing water is not evident.	*Score:* 0 *Explanation:* There is no visible water in the landscape, and the project would not introduce water to the project area.	0	No Impact
	Detail: Existing and post-development views do not include water features.			
Color	*Score: 3* *Explanation:* Foreground and middleground terrain are marked by earth tones, including tan, brown, and light and dark green. A single light-colored structure with angled roof is visible in the middleground. Middleground vegetation (dark green) transitions to tan-colored hills and dark green mountains in the background.	*Score: 2* *Explanation:* A low and horizontal, dark grey/blue band of color displayed by solar arrays would be detectable in the middleground on the project site; however, due to distance and the low-profile scale, solar arrays would not be dominant landscape features. Gen-tie line infrastructure color contrasts (dark grey/brown) would be heightened by the tan color of distant hills.	-1	Less than Significant
	Detail: The foreground and middleground are marked by tans, browns, and greens, with a single agriculture building displaying an off-white tone. Solar arrays would be relatively distant in the middleground and would display a low, rectangular band of dark grey/blue color that would contrast with the prevalent earth tones			

TABLE 4-1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3 – INTERSTATE 5

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
	in the landscape. Still, due to distance and low profile, color contrasts associated with solar arrays would be weak.			
Adjacent Scenery	*Score: 3* *Explanation:* Views of the valley landscape are moderately enhanced by hills and mountains in the background.	*Score: 2* *Explanation:* Although solar arrays would not result in significant view blockage, the introduction of gen-tie line infrastructure would visibly interrupt existing views to distant hillsides and would result in reduced visual quality.	-1	Less than Significant
	Detail: Existing views to background hills would be interrupted by the thin and regularly spaced gen-tie line poles in the middleground.			
Scarcity	*Score:* 2 *Explanation:* The view contains no particularly unusual features. Irrigated agricultural lands framed by distant hills and mountains add interest to the scene but are common throughout the local area.	*Score: 1* *Explanation:* Although the landscape would be modified by the introduction of solar arrays and gen-tie line infrastructure in the middleground, the post-development view would be similar to existing views of electrical infrastructure across the valley landscape.	-1	Less than Significant
	Detail: Views of hills and mountains are not unique to KOP 3 in the region. In addition and as demonstrated in Figures 4.1-4 and 4.1-5, electrical distribution and transmission infrastructure is common, and project development would not substantially alter the availability of hill and mountain views in the project area.			
Cultural Modifications	*Score:* -0 *Explanation:* Manufactured swales/ditches, agricultural lands, electrical distribution infrastructure, and a rectangular agricultural structure are visible in the foreground-middleground of the landscape.	*Score:* -1 *Explanation:* The view would be noticeably modified by dark, horizontal and vertical elements of development located in the middleground. Specifically, color and line contrasts associated with the solar arrays and gen-tie line would	-1	Less than Significant

TABLE 4-1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3 – INTERSTATE 5

Rated Feature	Pre-Development Conditions	Post-Development Score	Difference in Scores	Impact Significance
		be heightened due to views of these features being available against the distant tan hills.		
	Detail: Existing cultural modifications include electrical distribution lines and poles, agricultural development, and a single agricultural building. Solar arrays would be located in the middleground but would be low and would not dominate the view. The thin form and dark color of regularly spaced gen-tie line poles would attract attention and create form, line, and color contrasts, but the scale and dominance of these features would be reduced by distance at KOP 3.			
Totals:	***15***	***10***	***5***	**Potentially Significant**

NOTE: Existing conditions and post-development simulated views are depicted in Figure 4.1-6.

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 low profile (i.e., 12 feet in height or less). As such, solar panels would not block long-distance views, and as evidences by Figure 4.1-4 through 4.1-6, would be diminished when viewed from 0.5 miles away or farther.
- Solar panels do not create significant levels of glare, as explained for Impact 4.1-4, below.
- Minimal on-site lighting would be required during operations, as explained for Impact 4.1-4. Facilities would not operate 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 potentially significant visual impacts to the existing visual quality and character of the site and surrounding area. Although the visual change associated with project development would generally be faint and muted when viewed from a distance of greater than 0.3 miles (see Figures 4.1-4, 4.1-5, and 4.1-6), visual contrast resulting from the introduction of dark project features (e.g., solar arrays and gen-tie line infrastructure) would be noticeable as experienced from local roads and I-5. Even with distance and reduced detail, solar arrays would be experienced as a low, horizontal band of dark color that, while not dominant, would attract attention from local viewers. In addition, the severity of visual changes and impacts to visual quality and

character would be heightened, and visual contrasts would be stronger when solar arrays are viewed from locations closer than 0.3 miles, such as Copus Road and Old River Road, which run parallel to Sites 2, 3, and 4 (see Figure 4.1-3). As shown in Figure 4.1-3, segments of these roads would offer immediate foreground views to solar arrays and perimeter fencing, and along Old River Road, solar panels would be within the immediate foreground of westerly and easterly oriented views (albeit for a brief duration). Further and addition to the introduction of thousands of solar panels, the on-site substation, O&M building, energy storage component, and gen-tie line infrastructure would increase the footprint and presence of solar and electrical transmission development in Kern County and along the I-5 corridor. The project would introduce solar development elements where they do not currently dominate the landscape (i.e., west of I-5 and near the I-5/SR-99 split), resulting in significant aesthetic impacts.

Mitigation Measure (MM) 4.1-1 through MM 4.1-4 would be implemented to reduce anticipated visual quality impacts. As detailed below, the measures would limit vegetation removal, provide for screening fencing that would reduce the visibility of perimeter project features, provide for color treatment of structures to better blend into the landscape, and ensure that the site is kept free of debris and trash. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open valley landscape character of the project site and surrounding area to further minimize view effects, impacts to visual resources would remain significant and unavoidable.

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 the following:

a. The project proponent/operator shall clear debris from the project site 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 2 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: The project proponent and/or operator shall install metal fence slats or similar view-screening materials, as approved by the Kern County Planning and Natural Resources Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to a residence or parcels zoned for residential use, including E (Estate Residential), R-1

(Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), and PL (Platted Lands) zoning, unless the adjacent property is owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department) or a public or private agency that has submitted correspondence to the Kern County Planning and Natural Resources Department requesting this requirement to be waived. Should the project proponent/operator sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.

MM 4.1-3: Prior to the issuance of a building permit for all, or a phase of, the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan for review and approval by the Kern County Panning and Natural Resources Department that will ensure that all project facilities included in the building permit application for that particular phase, such as the operations and maintenance buildings, gen-tie line poles, and array facilities, blend in with the colors found in the natural landscape to the extent feasible. All color treatments shall result in matte or nonglossy/nonreflective finishes.

MM 4.1-4: Wherever possible, within the proposed project boundary, natural vegetation shall remain undisturbed unless mowing is necessary for placement of 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 supporting native vegetation that would be 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 and/or allowed to re-vegetate with the existing native seed bank in the topsoil where possible to establish revegetation. Areas that contain permanent features, such as perimeter roads, maintenance roads, or under arrays, or fallow agricultural lands, shall not require revegetation.

b. The plan must include the approved California native seed mix that will be used on site, a timeline for seeding the site, the details of which areas are to be revegetated, and a clear prohibition of the use of toxic rodenticides.

c. Ground cover shall include native seed mix and shall be spread where earth-moving 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 architects, horticulturists, or botanists, with local knowledge as shown on a 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 3-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the 3-year period, an annual evaluation report shall be submitted to the Kern County Planning and Natural

Resources Department for each of the 3 years. Should efforts to revegetate with the existing native seed bank in the topsoil prove in the second year to not be successful by 75% cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department, and an additional year shall be added to the monitoring program to ensure coverage is achieved. The 3-year monitoring program is intended to ensure that 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

Despite implementation of MM 4.1-1 through MM 4.1-4, impacts would be significant and unavoidable.

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.

Construction

Lighting

With the exception of temporary security lighting installed at/near construction staging and parking areas, project construction would not typically require the use of nighttime lighting. Construction of the project would occur 7:00 a.m. to 7:00 p.m., Monday through Friday. Weekend construction work is not expected to be required, but may occur on occasion, depending on schedule considerations and site conditions. During evening hours and in the event that nighttime construction activities occur due to unanticipated schedule delays or to complete critical activities, the use of construction lighting may result in unnecessary light trespass onto adjacent properties or illumination of the nighttime sky. However, with implementation of MM 4.1-5, the minimum amount of lighting needed to ensure a safe work environment and provide adequate illumination of work areas would be used. In addition and during these limited and infrequent occurrences of nighttime construction activities, all lighting in use would be shielded and directed downward to avoid unnecessary illumination of (and light trespass of) adjacent properties and the night sky. Therefore, with implementation of MM 4.1-5, construction lighting impacts would be less than significant.

Glare

As described above, the majority of construction activities would occur during daytime hours wherein lighting would not be required. Potential glare associated with infrequent use of stationary and mobile lighting fixtures during construction would be minimized through implementation of MM 4.1-5. The influx of construction vehicles and transport of materials would temporarily increase potential for glare in the project area through a perceptible increase in potentially reflective vehicles and materials in the project area; however, such occurrences would be highly localized and minimal. Despite the presence of sensitive viewers (scattered residences and a small airstrip) in the project area, potential glare would be intermittent because glare sources (which would be small in scale compared to the project site) would move around the project site as construction progresses. Therefore, project construction would not create a new source of substantial glare, and impacts would be less than significant.

Operation

Lighting

As described in Chapter 3, *Project Description*, motion-sensitive, directional security lights would be installed to provide adequate illumination around the collector substation areas, the O&M building, each inverter-transformer station, at gates, and along perimeter fencing. Maintenance of the collector substation, O&M building, and inverter stations may necessitate the temporary use of lighting during nighttime hours. Gate and fencing lighting, and infrequent maintenance activities at the facilities mentioned above, would not result in significant illumination of nighttime skies or light trespass because, with implementation of MM 4.1-5, lighting would operate consistent with the County of Kern's Dark Skies Ordinance, would be of the minimal illumination needed for safety and security, and would be shielded and directed downward. The solar generator/solar arrays would not require lighting. Therefore, with implementation of MM 4.1-5, long-term operational lighting associated with the project would be less than significant.

Glare

Solar panels and more specifically, the glass surface of solar panels, represent a potential source of glare during project operations. Inbound sunlight could potentially reflect off the panel surface and be received by receptors/viewers in the surrounding area. Any glare produced by panels is not anticipated to result in visual discomfort or impairment of views for residents or motorists. Panel reflectively is reduced by efficiencies in the glass panel manufacturing process, and panels are designed to absorb as much sunlight as possible. Further, panels would be angled and tilted such that reflected light from inbound sun rays would be projected at a similar angle and would generally be "above" the typical height of cars and trucks (and their drivers and passengers) on surrounding roads. Still, there is potential for northbound and southbound Old River Road motorists, and eastbound and westbound Copus Road motorists, to receive project-generated glare. Specifically, during morning hours when panels are tracking the sun as it rises from the eastern horizon, glare potential would be greatest for Old River Road and westbound Copus Road motorists. During these hours, panels would be within the periphery and normal viewing angle of motorists. In the late afternoon leading to sunset, glare potential would be greatest for eastbound Copus Road motorists (late-afternoon glare potential for Old River Road motorists would be similar to morning glare potential).

In addition to panels, project lighting and building materials could potentially generate night and daytime glare capable of being received by off-site viewers surrounding the project site. For example, if not shielded and directed downward, project lighting at entrances, fencing, and other locations could create glare conditions. In addition, the use of potentially reflective building materials, including metallic components, could create glare during daytime hours.

Potential glare from solar panels, project lighting, and project structures represents a potentially significant impact to available day and nighttime views in the project area. To reduce the potential for project-generated glare, MM 4.1-5 through MM 4.1-7 would be implemented, which require lighting to be directed downward and shielded, the use of glare-reducing technologies, and the use of non-reflective materials. These measures would control lighting fixtures and reduce potential for glare, and minimize the potential for solar panels and structures to reflect sunlight in a manner that would cause visual discomfort or impairment of views. Therefore, with implementation of MM 4.1-5 through MM 4.1-7, potentially significant glare impacts would be reduced to less than significant.

Mitigation Measures

MM 4.1-5: 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 demonstrate that the project is 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 4.1-6 Prior to the issuance of building permits, the project proponent shall demonstrate that 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 4.1-7 Prior to commencement of project operations of the solar facility, the project operator shall demonstrate that all on-site buildings use non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting Impacts and Mitigation Measures

As shown in Table 3-4, *Cumulative Project List*, in Chapter 3, *Project Description*, there are five projects within 1 mile of the project site, including a 170-megawatt solar facility and a 28-megawatt solar facility. An additional solar facility, Pastoria Solar Energy, is located within 6 miles of the project site. Additional solar projects in both the valley and desert 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.

Unobstructed views of regional topographical features and undeveloped lands would no longer be available as acreage is developed with solar projects that would contain PV panels and new transmission lines, and would be unavailable for any other use for the 20- to 30-year lifespan of these large-scale solar projects.

As noted above in the Impact 4.1-3 discussion, the project would result in significant and unavoidable impacts related to views, visual quality, and visual character despite the implementation of MM 4.1-1 through MM 4.1-7. Depending on the severity of assessed impacts, other projects in the region would also be required to implement applicable measures intended to reduce impacts. Despite the inclusion of mitigation and similar to the limitation of mitigation associated with the proposed project in terms of reducing impact severity, solar energy development at this size and scale affects thousands of acres of rural land that may have been habitat or agriculturally planted, and it is a fundamental change in the nature of the visual experience for communities and the traveling public. Therefore, cumulative impacts would be cumulatively significant and unavoidable.

Mitigation Measures

Implement Mitigation Measures MM 4.1-1 through MM 4.1-7.

Level of Significance After Mitigation

Cumulative impacts would be significant and unavoidable.

4.2 Agricultural Resources

4.2.1 Introduction

This section of the EIR describes the affected environment and regulatory settings for agriculture and forestry resources for the project. It also describes the potential impacts on agricultural and forestry resources associated with the construction and operation of the Sandrini Solar Project (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 and Forest Resources Study, Kern County, Sandrini Solar Project prepared by Quad Knopf Consultants (Appendix B) prepared for the project and provided 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 2018 Kern County Agricultural Crop Report, agriculture in Kern County was worth approximately $7.4 billion in 2018, which is an increase of 3% from the 2017 crop value. The top five commodities for 2018 were grapes, almonds, citrus, milk, and pistachios, which made up more than $4.4 billion (59%) of the total value, with the top twenty commodities making up more than 71% of the total value (Appendix B).

Kern County is a growing population and like many agriculturally based jurisdictions, must balance urbanization and the loss of farmland. As shown in Table 4.2-1, *Agricultural Land Use Designation Conversions in 2018*, approved amendments re-designated 132.18 acres of agriculturally designated lands for non-agricultural uses. As discussed in Chapter 11.0 *Agricultural Land Conversion*, of the Kern County General Plans and Housing Element Annual Progress Report (January 1, 2018, to December 31, 2018), amendments resulted in a total net conversion of 132.18 acres within unincorporated Kern County. (Note: These various farmland designations are defined in Section 4.2.3, *Regulatory Setting*).

TABLE 4.2-1: AGRICULTURAL LAND USE DESIGNATION CONVERSIONS IN 2018

Project/Applicant	Case Number	Document	From Map Code	To Map Code	Acreage Converted
Afinar, Inc. by Bernard Salgado	GPA 5, Map 143-41	KCGP	8.1/2.3	5.7/2.3	-21.18
Highway 58, LLC by EPD Solutions	SPA 2, Map 30	Lost Hills Specific Plan	4.1 (Agriculture)	4.1 (Industrial)	-112
				Total Acreage Converted (net)	**-132.18**

SOURCE: *Kern County General Plans and Housing Element Annual Progress Report (January 1, 2018 to December 31, 2018)*, 2019.

According to Kern Economic Development Corporation (KEDC), it is estimated that the total population of Kern County will reach approximately 1,213,558 individuals in 2040 (KEDC, 2021), growing from today's population of approximately 916,828 (DOF, 2020). As a result of the anticipated population growth, the amount of agricultural land would most likely decrease.

However, it is important to note that the conversion of agricultural land is affected by numerous factors other than population growth and urban development. These factors include, but not limited to water prices and supply, commodity prices, labor, the proximity of processing and distribution facilities, and pest management. Additionally, factors such as weather, labor disputes, and trade agreements can also affect decisions regarding crop selection and which lands rotate in and out of production. Most conversion of Prime or Farmland of Statewide Importance 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

The agricultural land upon which the project would be developed is either fallow or actively planted with annual row crops. The project sites are within an area that has historically been used for agricultural crop production, and approximately 1,403.94 acres of the approximately 3,469.87 total project acres (13 of the 33 parcels within the project site boundaries) are subject to active Williamson Act Land Use contracts, as outlined in Table 4.2-2, *Williamson Act Land Use Contract Cancellations*, and as shown in Figure 3-8, *Williamson Act – Active and Nonrenewals*. Additionally, 9 of the 33 properties in the project boundary are identified on the Farmland Mapping and Monitoring Program (FMMP) as containing Important Farmland (Figure 3-9, *Farmland Mapping and Monitoring Program Designations;* see Table 4.2-3, below). Project parcels are located within Agricultural Preserve No. 12 and No. 13.

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
21-01	Book 4273, Page 13 Doc No. 28397	4/29/1969	Nonrenewal	445-062-34	289.11
21-02	Book 4492, Page 243 Doc No. 12231	2/24/1971	Nonrenewal	295-100-19, 295-130-21, 295-130-48, 295-	*0.0*[a]

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
				130-51, 295-120-15, 295-130-26	
21-03	Book 4373, Page 24 Doc No. 10965	2/17/1970	Nonrenewal	295-130-57, 295-130-62	*427.65*[b]
21-04	Book 4272, Page 933 Doc No. 28386	3/31/1969	Nonrenewal	295-130-32, 295-130-64	*338.35*[c]

NOTES: WALUC = Williamson Act Land Use Contract; APN = Assessor's Parcel Number.

[a] = All APNs associated with WALUC Cancellation Number 21-02 are located within project Site 5 (on-site conservation land) and this acreage would be preserved as is and should not be considered as acreage to be removed.

[b] = APN 295-130-57 is located within project Site 5 (on-site conservation area) and this acreage (191.35 acres) would be preserved as, is and should not be considered as acreage to be removed.

[c] = APN 295-130-32 is located within project Site 5 (on-site conservation area) and this acreage (16.13 acres) would be preserved as is and should not be considered as acreage to be removed.

According to the Kern County GIS Accessor Map, Site 1 is not located in an agricultural preserve; however, portions of Site 2 and Site 3 consist of several parcels located within an agricultural preserve. Site 4 is located entirely within an agricultural preserve (Kern County 2021). Additionally, the project site is surrounded by Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Nonagricultural or Natural Vegetation, Grazing Land, and Urban and Built-Up land (Figure 3-9, *Farmland Mapping and Monitoring Program Designations*).

The DOC defines Prime Farmland as land that has the best combination of physical and chemical characteristics for the production of crops. Farmland of Statewide Importance is defined as land other than Prime Farmland that has a good combination of physical and chemical characteristics for the production of crops. Unique Farmland is defined as land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, yet has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date (DOC 2020). See Section 4.2.3, *Regulatory Setting*, under the subheading *State* for additional information on DOC farmland classifications. Approximately 0.97% of the project site is located on Prime Farmland as designated under the California Department of Conservation's (DOC) FMMP, 34.51% is located within Farmland of Statewide Importance, and 4.2% is located on Unique Farmland (see Figure 3-9, *Farmland Mapping and Monitoring Program Designations;* Table 4.2-3, *FMMP Designated Important Farmland Within the Project Site*).

TABLE 4.2-3: FMMP DESIGNATED IMPORTANT FARMLAND WITHIN THE PROJECT SITE

FMMP Designation	Sum of Acreage	Percent of Project Site
Prime Farmland	33.67	0.97%
Farmland of Statewide Importance	1,197.66	34.51%
Unique Farmland	145.61	4.20%
Grazing	1,430.43	41.22%
Nonagricultural or Natural Vegetation	457.74	13.19%

TABLE 4.2-3: FMMP DESIGNATED IMPORTANT FARMLAND WITHIN THE PROJECT SITE

FMMP Designation	Sum of Acreage	Percent of Project Site
Semi-agricultural and Rural Commercial Land	2.53	0.07%
Urban and Built Up Land	144.97	4.18%
Vacant or Disturbed Land	57.38	1.65%
Total	**3,469.97**	**100%**

SOURCE: DOC 2018.

4.2.3 Regulatory Setting

Federal

Farmland Protection Policy Act (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 additionally directs federal programs to be compatible with State and local policies for the protection of farmland. Under the FPPA, the term "farmland" includes Prime Farmland, Unique Farmland, and Farmland of Statewide or Local Importance. Farmland that is subject to FPPA requirements does not have to be currently used as cropland. It can be forestland, pastureland, or other land 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 2 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 may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or rely on assistance from a federal agency (Natural Resources Conservation Service [NRCS], 2019).

State

California Department of Conservation, Division of Land Resource Protection

The California Department of Conservation (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, 2018) 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 four 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 four 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 four 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 Sections 51200–51297.4), 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, 2020a).

Under the Williamson Act, a landowner commits the parcel to a 10-year period, during which time no conversion out of agricultural or open space 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, 2020a).

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, 2020b).

California Government Code Section 51282

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

(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 non-contracted 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 non-contracted land.

(c) For purposes of paragraph (2) of subdivision (a) cancellation of a contract shall be in the public interest only if the council or board makes the following findings: (1) that other public concerns substantially outweigh the objectives of this chapter; and (2) that there is no proximate non-contracted 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 non-contracted 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.

As used in this subdivision "suitable" for the proposed use means that the salient features of the proposed use can be served by land not restricted by contract pursuant to this chapter. Such non-restricted land may be a single parcel or may be a combination of contiguous or discontinuous parcels.

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% reduction in the taxable value of land and growing 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 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.

The project site entirely consists of lands designated as 8.1, Intensive Agriculture. The site is also generally surrounded by lands designated as 8.1, Intensive Agriculture, with the exception of lands designated as 8.5, Resource Management, which closely border Site 2 to the north.

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.

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 resource 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 13: Any property in an Agriculture Preserve proposing to be subject to a Williamson Act Contract or Farmland Security Zone Contract must have a Resource designation.

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.

Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.

Measure G: Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation.

Mojave and West Edwards Road Settlement Specific Plans

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 Section 4.2.2, *Environmental Setting*, the Kern County Zoning Ordinance designates the entire project site for agricultural uses (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 proposed solar 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 forestry resources have been evaluated on a qualitative basis by reviewing the *Agricultural Conservation and Forest Resource Study* (Appendix B) and the 2018 DOC Important Farmland Map. 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.

Potential impacts of the proposed project to agricultural lands were also determined using guidelines of the California Land Evaluation and Site Assessment (LESA) Model. The LESA Model provides guidelines for rating the relative quality of land resources based on specific measurable features. It is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process" (Public Resources Code Section 21095). It is designed to assist in the making of determinations of the potential significance of a project's conversion of agricultural lands. The California Agricultural LESA Model encompasses six different factors, which are divided into two equally weighted sets: (1) Two Land Evaluation factors (Land Capability Classification Rating and Storie Index Rating are based upon measures of the quality of soil resources and are intended to measure the inherent, soil-based qualities of land as they relate to agricultural suitability; and (2) Four Site Assessment factors (Project Size Rating, Water Resource Availability Rating, Surrounding Agricultural Lands Rating, and Surrounding Protected Resource Lands Rating) are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land.

Thresholds of Significance

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

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to 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 acres or more (Public Resources Code Section 15206(b)(3)).

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.

Implementation of the proposed project would result in the construction of an approximately 3,470-acre photovoltaic solar facility. The facility would convert approximately 34 acres of Prime Farmland, 1,198 acres of Farmland of Statewide Importance and 146 acres of Unique Farmland, as shown on Figure 3-9, *Farmland Mapping and Monitoring Program Designations*. Although the Project site has been actively farmed within the past 10 years, the 34 acres of the project site that are designated as "Prime Farmland" only represent a fraction of a percent of the 885,957 acres of harvested agricultural land in Kern County (DOC 2018).

If a project were to convert Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, then that project may result in a significant impact. The project would result in the direct conversion of 1,916 acres of Important Farmland, which is a potentially significant amount of land in terms of its agricultural capability and soil quality with available irrigation. The project site has been continuously farmed throughout the past four years and represents Class II, III, and IV soils in some areas, which are amongst the higher quality soils for farmland if irrigation is possible; the project site are currently irrigated. However, within a Countywide context, the lost acreage represents a small part of the total 874,026 acres of Important Farmland within Kern County. Nevertheless, this loss represents a significant impact under CEQA (Appendix B).

The LESA Model was used to evaluate the significance of project farmland conversion. The project received an overall score of 85.4, which is considered significant (see Section 4.2.4, *Impacts and Mitigation Measures*, under the subheading *Methodology*; refer to Appendix B).

The project would be consistent with the goals, policies, implementation measures, and action programs of the Kern County General Plan (Goals 2, 3, and 5; Policies 7, 9, and 12) that promote the preservation and use of available natural resources. Even though agricultural uses would not occur with the proposed project site, should the solar facility cease operations, the Exclusive Agriculture (A) zoning and the County's standard mitigation measure requiring a Decommissioning Plan and financial assurances would promote the conversion of the site back to agricultural uses. Although implementation of the project would convert a very small portion of the County's Prime Farmland, the conversion of approximately 1,377 acres of Important Farmland (includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland) constitutes a significant impact.

Feasible and Reasonable Mitigation Analysis

CEQA requires that all feasible and reasonable mitigation be reviewed and applied to projects. CEQA Section 15364 defines feasible to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." The standard of applicability also includes CEQA case law and determinations on the ability to impose specific mitigation on projects. Agricultural conservation easements are legally recorded deed restrictions that are placed on a specific property used for agricultural production. The goal of an

agricultural conservation easement is to maintain agricultural land in active production by removing the development pressures from the land. Such an easement prohibits practices that would damage or interfere with the agricultural use of the land. Because the easement is a restriction on the deed of the property, the easement remains in effect even when the land changes ownership. While such voluntary easements are an important tool for land owners for tax purposes and land trust groups to encourage agricultural uses and protect land from urban encroachment they are no longer considered mitigation under CEQA. The Fifth Appellate District February 25, 2020 decision in King and Gardiner Farms, LLC et all v County of Kern et al (F077656 (Super Ct. Nos. BCV -15-101666, BCV-15-101679) determined that mitigation to require placing other lands at a 1:1 ratio or any other ratio under an agricultural easement does not mitigate for the loss of farmland as it does not create new farmland. Mitigation to require restoration of farmland for this project was considered and rejected as water is no longer assured for specific parcels of land and therefore, successful restoration of depleted lands and continued farming cannot be enforced by the county over the life of the project as required for all mitigation imposed on the project. The management of the project for biological protections and dust control will ensure that the project does not interfere with the use of the surrounding properties for agriculture uses and encourage the conversation of surrounding lands. All feasible and reasonable mitigation has been evaluated and no such mitigation has been identified to be imposed that has not been included in the Draft EIR.

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.

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

Agricultural Zoning

The Kern County Zoning Ordinance classifies the project sites as being within the A (Exclusive Agriculture) and a portion of APN 295-130-64 has a Floodplain Secondary (FPS) Combining District. Within the County jurisdiction, the Agricultural zone districts serve as a default zone designation used to categorize land that is outside urban/metropolitan areas. The proposed project area is approximately 14 miles south of the greater metropolitan area of Bakersfield, so the majority of land in proximity to the project is zone for agricultural uses. The Kern County General Plan encourages the development of alternative sources of energy, such as solar energy, while protecting the environment. Solar facilities are permitted on properties within the A zone district pursuant to Chapter 19.12.030.G with approval of a conditional use permit (CUP). Therefore, upon approval of the CUP application, the proposed project would be consistent with and would not conflict with the existing zoning of the project site, and the impact of conversion of agricultural land to a permitted, consistent use would be lessened. Additionally, State law allows gas, water, and electric facilities to be built on contracted parcels, as they do not compromise the land's long-term productive agricultural capability.

Williamson Act Contract

Large scale solar is not consistent with the Williamson Act Contract on the parcels. The project site contains approximately 3,469.97 acres to be developed as a solar photovoltaic facility. A total of approximately 1,403.94 acres are subject to active Williamson Act Land Use contracts, all of which have documented petitions filed for the non- renewal of each contract.

As discussed in more detail under 4.2.3, *Regulatory Setting*, above, the principal purpose of the Williamson Act is to preserve agricultural 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. However, the project proponent has petitioned 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)).

Government Code Sections 51280 through 51283 sets forth procedures for cancelling a Williamson Act contract. The property owner must pay a cancellation fee and the lead agency must make findings justifying the cancellation. Table 4.2-4, *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 4.2-4 below for the consistency determination of the project with Government Code Section 51282.1(c)(1).

TABLE 4.2-4: 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.	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 Sustainablity Plans submitted to the Department of Water Resources by the valley Groundwater Authorities. The cancellation of the submitted Williamons Act Contracts are therefore in the public interest of Kern County for integrity of the contract system. The alternative use of the property for b 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

TABLE 4.2-4: 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
	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: **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 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. **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. **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

TABLE 4.2-4: 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
	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.
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.	**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 the additional electricity produced which is a function not only of line capacity but also the arrangement of the electrical grid balanced loads. 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. In searching for suitable parcels upon which to site this Project, extensive research and outreach was conducted within a roughly eight-mile radius of the Wheeler Ridge 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 landowners in this area have made major long-term investments in permanent crops such as almond and pistachio trees that make their properties unsuitable for solar. The proximity to existing or proposed transmission and the Wheeler Ridge substation is also a factor in eliminating non-contracted parcels. Finally, given the financial returns historically generated by permanent crops, even many landowners that have

TABLE 4.2-4: 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
	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.

As shown in Table 5-1 of the *Agricultural Conversion and Forest Resource Study* (see Appendix B) and shown above as Table 4.2-4, 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.

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.

Impact 4.2-3: The project would not 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.

Mitigation Measures

No mitigation would be required.

Level of Significance After Mitigation

No impact would occur.

Impact 4.2-4: The project would not 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.

Mitigation Measures

No mitigation would be required.

Level of Significance After Mitigation

No impact would occur.

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 and Forest Resources Study* provided as Appendix B to this EIR, the project would not induce the conversion of other nearby agricultural lands to non-agricultural uses. Some of the project sites are currently in agricultural production and have been used continuously for agricultural production for the most recent four years, as evidenced by the permit records of the Kern County Agricultural Commissioner's Office. However, the removal of some project sites from agricultural production is not anticipated to affect nearby growers' ability to farm and would not require additional restrictions and limitations on pesticides, fungicides, and herbicides used on the crops as the project does not include the addition of any sensitive receptors to the adjacent agriculture lands. The proposed use as a solar facility is not a high intensity use which would create significant impacts to adjacent lands through its ongoing operation, other than during construction that can be considered as only a temporary impact (Appendix B).

Further, the project does not include a zone change that would allow potential future urbanization following decommissioning of the project (Appendix B). While the project area may experience some increased traffic during construction of the site, the overall amount of traffic would not increase significantly due to the limited number of employees needed to operate the facility. The addition of the project to the vehicle miles traveled would not be considered significant to adjacent agricultural lands (Appendix B). The proposed project would also ensure that more water resources are readily available in the surrounding areas by no

longer using on-site groundwater wells or surface water for irrigation purposes. The decrease in the project's water demand has been calculated in the WSA prepared for the project (refer to Section 4.17, *Utilities and Service Systems*; Appendix B). In addition, the project is sited along major arterial streets and roadways. The proposed use would not substantially affect the agricultural character or production of the area (Appendix B).

The removal of these properties from agricultural use would not substantially affect the agricultural character of the area, and the conversion to non-agricultural uses that could potentially be caused by the project would be limited to the project site. The project would not introduce a non-agricultural use that is sensitive to or incompatible with the surrounding agricultural operations that would occur nearby. The fact that solar facilities are not sensitive receptors maintains and perhaps improves its compatibility with surrounding agricultural uses. Alternatively, solar facility operations allow agricultural operations to continue while not creating additional adverse impacts by increasing water availability, generating limited amounts of traffic and lowering impacts from other nuisances such as dust in the surrounding areas. Kern County Ordinance Code 8.56 (Ordinance G-6664, Section 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. Therefore, the project would only result in direct conversion impacts to the subject parcels with no direct impacts on adjacent agricultural lands (Appendix B).

Based on the State passage in 2014 of the Sustainable Groundwater Act (SGMA) the basins in the Central Valley are required to balance their water pumping over the next 20 years. The Groundwater Sustainability Agencies (GSA) in Kern County have determined that the basin is overdrafted by almost 1 million acre-feet (af) of water annually.

Partially as a result of the increasing scarcity and price of water and the need to reduce regional water use to implement the Groundwater Sustainability Plans (GSP) agricultural production is being managed for water transfers, and continues to decline as agricultural land is converted to less water intensive land uses, including renewable energy projects. The project would contribute to that trend by developing a less water intensive use than agriculture on the project sites, thereby offsetting demand for additional water sourced from groundwater resources in the County. As the project would not be the cause of conversion of neighboring lands, but the regional issues with water availability and cost, the potential conversion of adjacent lands from the conversion of the project land to a social project are considered less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be 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)).

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 proposed project would result in the construction of an approximately 3,470-acre photovoltaic solar facility. Approximately 1,403.94 acres is subject to a Williamson Act Contract. The applicant has filed a Notice of Non-Renewal and a Petition of Cancellation for those properties, 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 has petitioned 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)).

Kern County is one of the three top participating counties in the State, with almost 1.7 million acres of land under a Williamson Act contract in 2015. Kern also has one of the largest enrollment decreases in the State. The County saw a decrease of over 21,448 acres of contracted land in 2015 and non-renewal of 5,931 acres (California Department of Conservation 2016; Appendix B).

The cancellation of the project's contracts is a potentially significant amount of land in terms of its agricultural value. Within a regional context, the project's lost acreage represents a negligible 0.08% of the total 1.7 million acres of contracted lands and 0.21% of the 874,026 acres of Important Farmland within Kern County (DOC 2018). However, six of the parcels exceed 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 1,403.94acres of contracted land constitutes a potentially significant impact. This is further confirmed by the results of the California Agricultural LESA as noted above. The LESA model concludes that the project has a total score of 85.4 points, which falls within the "Considered Significant" category without caveats (Appendix B).

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 proposed 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. Mitigation Measure MM 4.2-1 is provided to reduce this impact; however, impacts would not be reduced to a level that is less than significant, and impacts would remain significant and unavoidable.

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 After Mitigation

Impacts would be significant and unavoidable.

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 proposed 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 conversion of approximately 1,377 acres of Important Farmland to non-agricultural use and the cancellation of approximately 1,404 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.

Mitigation Measures

Implement Mitigation Measure MM 4.2-1.

Level of Significance After Mitigation

Impacts would be significant and unavoidable.

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4.3 Air Quality

4.3.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of air quality for the project. This section also evaluates the short- and long-term air quality impacts associated with development of the project and, where necessary, mitigation measures are provided to avoid or lessen the impacts of the project.

Information in this section is based primarily on the *Air Quality and Greenhouse Gases Study for the Sandrini Solar Project, Kern County, California*, prepared by Insight Environmental/Trinity, provided as Appendix C of this EIR and incorporated by reference herein. 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* and San Joaquin Valley Air Pollution Control District's (SJVAPCD) *2015 Guidance for Assessing the Mitigation Air Quality Impacts* (SJVAPCD 2015).

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 and is under the jurisdiction of SJVAPCD. The San Joaquin Valley Air Basin includes the western half of Kern County. The San Joaquin Valley Air Basin is separated from the Mojave Desert Air Basin to the southeast by the Tehachapi Mountains and the south end of the Sierra Nevada Mountains. The project site is located in unincorporated Kern County, approximately 9 miles northwest of the community of Mettler, CA.

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 site is located in unincorporated south-eastern Kern County, in central California. The nearest populated areas to the project site are the unincorporated communities of Mettler, Kern Lake, and Arvin which are located approximately 8 miles southeast, 3 miles east, 9 miles northwest, and 16 miles northeast of the project site, respectively. The City of Bakersfield, located approximately 18 miles to the north, is the nearest metropolitan area in relation to the project site. Other populated areas within the vicinity are the City of Taft, unincorporated community of Millux, the unincorporated community of Weedpatch, the unincorporated community of Lamont, the unincorporated communities of Frazier Park, Pinion Pines, and

Pine Mountain Club (collectively referred to as the Mountain Communities) which are located approximately 20 miles east, 7 miles northwest, 13 miles northeast, 14 miles northeast, and 21 miles south of the project site, respectively. The southeastern 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 2015). 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, where the project is located (SJVAPCD, 2015). 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 7 miles per hour (Weather Underground 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 2015).

Sensitive Receptors

Sensitive receptors are land uses or people 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 site is located entirely within the Kern County General Plan area. There are three sensitive receptors in the project area. The first sensitive receptor is a residential home immediately adjacent to Site 4, south of Copus Road. The second sensitive receptor is a residential home immediately adjacent to Site 2, located west of Old River Road. The third sensitive receptor is a residential home located north of Copus Road, approximately 0.43 miles west of Site 3.

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 (USEPA) 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 (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM) (specifically PM_{10} and $PM_{2.5}$), and lead. 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, USEPA 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]). California has also established CAAQS for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected to occur under the project and, thus, these pollutants are not addressed further in this EIR.

Table 4.3-1, *State and National 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 the project area, located in Kern County, is currently nonattainment/severe for 1-hour ozone standards, nonattainment for 8-hour ozone standards, nonattainment for 24-hour and annual arithmetic mean for PM_{10} standards, and nonattainment for annual arithmetic mean for $PM_{2.5}$ standards. The national attainment status for the project area is currently nonattainment/extreme for 8-hour ozone standards and nonattainment for 24-hour and annual arithmetic mean for $PM_{2.5}$ standards. State and national standards of all of the other criteria pollutants are classified as attainment and/or unclassified (SJVAPCD 2020; SJVAPCD 2018).

TABLE 4.3-1: STATE AND NATIONAL CRITERIA POLLUTANT STANDARDS AND SJVAPCD ATTAINMENT STATUS

Pollutant	Averaging Period	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Nonattainment/Severe	—	—
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment/Extreme
Particulate Matter (PM_{10})	AAM	20 µg/m^3	Nonattainment	—	—
	24-hour	50 µg/m^3	Nonattainment	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	—	—	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	Attainment	0.100 ppm	Attainment
Sulfur Dioxide (SO_2)	AAM	—	—	0.030 ppm	Attainment
	24-hour	0.04 ppm	Attainment	—	—
	3-hour	—	—	0.5 ppm	Attainment
	1-hour	0.25 ppm	Attainment	0.075 ppm	Unclassified
Lead	30-day average	1.5 µg/m^3	Attainment	—	—
	Calendar quarter	—	—	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		

NOTES: AAM = annual arithmetic mean; ppm = parts per million; µg/m3 = micrograms per cubic meter

SOURCE: SJVAPCD, 2020; SJVAPCD, 2018.

Local Air Quality

To assess localized air quality impacts, the CO significance thresholds are based on the state CO standards, shown previously in Table 4.3-1, 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 and air quality management districts to monitor ambient pollutant levels. The SLAMS network in Kern County consists of ten 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 $PM_{2.5}$ because the San Joaquin Valley is designated nonattainment for these pollutants by the USEPA and/or CARB. Ten ambient air monitoring stations operate in Kern County, eight of which are in the valley portion of Kern County and two of which are in the desert portion of Kern County. Air quality data statistics from the ambient air monitoring station with the highest pollutants readings between the Bakersfield-California Avenue, Edison and Arvin were used as representative of the project area's environmental setting due to the proximity of the monitoring stations to the project. 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 (2017–2019)

	Monitoring Year		
Pollutant	**2017**	**2018**	**2019**
Ozone (O_3)			
Maximum concentration (1-hour/8-hour average)	0.118/0.101	0.120/0.102	0.105/0.87
Number of days state/national 1-hour standard exceeded	13	27	13
Number of days national 8-hour standard exceeded	81	87	58
Suspended Particulate Matter ($PM_{2.5}$)			
Maximum concentration (24-hour)	101.8	100.9	83.7
Annual Average (national/state)	14.7/16	15.9/15.9	17.6/15.7
Number of days national standard exceeded (measured/calculated)	28	36	12
Suspended Particulate Matter (PM_{10})			
Maximum concentration (24-hour) (national/state)	210.0/158.2	179.0/174.9	664.2/652.2
Annual Average (national/state)	41.2/40.9	42.6/42.6	42.1/-
Number of days state standard exceeded (measured/calculated)	80	161	118

TABLE 4.3-2: AIR QUALITY DATA SUMMARY (2017–2019)

Pollutant	Monitoring Year 2017	2018	2019
Number of days national standard exceeded (measured/calculated)	0	4	8

NOTES: ppm = parts per million by volume; µg/m^3 = micrograms per cubic meter; NA=Not Available
SOURCE: Insight Environmental/Trinity Consultants 2021

Criteria Air Pollutants

The following is a general description of the source and health effects from the government regulated criteria air pollutants of ozone (O_3); reactive organic gasses (ROGs) and volatile organic compounds (VOCs), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM) (specifically PM_{10} and $PM_{2.5}$), sulfates, and lead (Pb).

Ozone (O_3)

Ozone (O_3) 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 the combination of ROG and oxides of nitrogen (NO_X), in the presence of 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 ROGs and 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 the 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 under the “Toxic Air Contaminants” heading 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 weaken the heart's contractions and lower 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)

NO_X are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and react 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 (NO_2), with the vast majority (95 percent) of the NO_X emissions being comprised of NO. NO is converted to NO_2 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 NO_2 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 NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible lung damage. Other health effects associated with NO_2 are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. Clinical studies of human subjects suggest that NO_2 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 NO_2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

Environmental Effects

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 (California Air Pollution Control Officers Association [CAPCOA] 2016).

Sulfur Dioxide (SO_2)

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 (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.

SO_2 is a colorless, irritating gas with a “rotten egg” smell that is formed primarily by the combustion of sulfur-containing fossil fuels. Historically, SO_2 was a pollutant of concern in Kern County, but with the successful implementation of regulations, levels have been reduced significantly.

Health Effects

High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Health effects from exposure to emissions of SO_2 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 SO_2 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 SO_2, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs’ defenses. SO_2 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).

SO_2 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. SO_2 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).

SO_2 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.

Environmental Effects

SO_2 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 8 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 SO_2 concentrations accelerate the corrosion of metals, probably through the formation of acids. SO_2 is a major precursor to acidic deposition. Sulfur oxides may also damage stone and masonry, paint, various fibers, paper, leather, and electrical components.

Increased SO_2 also contributes to impaired visibility. Particulate sulfate, much of which is derived from SO_2 emissions, is a major component of the complex total suspended particulate mixture.

Particulate Matter (PM_{10} and $PM_{2.5}$)

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 (PM_{10}) and 2.5 microns or less in diameter ($PM_{2.5}$). Thus, $PM_{2.5}$ is a subset of PM_{10}. PM_{10} 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 PM_{10} 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 PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from photochemical reactions of gaseous SO_2 and NO_X in the atmosphere to create sulfates (SO_4) and nitrates (NO_3), 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 United States, there are sources of PM_{10} in both urban and rural areas. PM_{10} 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

The size of particles is directly linked to their potential for causing health problems. PM_{10} 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 PM_{10} 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. PM_{10} 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 PM_{10}. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage man-made 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 recent 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 (Dockery and Pope 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 an estimated 4,000 hospital admissions for respiratory disease, an estimated 3,000 hospital admissions for cardiovascular disease, and an estimated 2,000 asthma-related emergency room visits. Exposure to diesel particulate matter (DPM) causes about 250 excess cancer cases per year in California.

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 SO2 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 2009).

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 (USEPA 2012).

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 the following:

- Damage to the brain and nervous system
- Behavior and learning problems (such as hyperactivity)
- Slowed growth
- Hearing problems
- Headaches

Lead is also harmful to adults. Adults can suffer from the following:

- Difficulties during pregnancy
- Other reproductive problems (in both men and women)
- High blood pressure
- Digestive problems
- Nerve disorders
- Memory and concentration problems
- 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

The following is a general description of the source and health effects from other pollutants of concern, including other pollutants of hydrogen sulfide (H_2S), vinyl chloride, visibility-reducing particles, toxic air contaminants (TACs), DPM, Airborne Fungus (Valley Fever), and asbestos.

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 H2S.

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 (USEPA 2000):

- 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 (USEPA 2000):

- 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 (USEPA 2000):

- 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

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 DPM, 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.

Health Effects

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 (CARB 2000).

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 (Valley Fever)

Coccidioidomycosis, commonly 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 2019a).

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 2019a).

Table 4.3-3, *Range of Valley Fever Cases*, presents the range of Valley Fever cases based on research conducted by the Valley Fever Center for Excellence.

TABLE 4.3-3: RANGE OF VALLEY FEVER CASES

Infection Classification	Percent of Total Diagnosed Cases
Unapparent infections	60 percent
Mild to moderate infections	30 percent
Infections resulting in complications	5–10 percent
Fatal infections	<1 percent

SOURCE: Valley Fever Center for Excellence, 2019b.

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 California 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 (California Department of Conservation 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 2020a). 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 2020b). 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 PM2.5 (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 USEPA, 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 USEPA regulations may not be superseded, some State and local regulations may be more stringent than federal regulations. The project site is located within the San Joaquin Valley Air Basin, 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 (EPA)

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, NO_2 (which is a form of NO_X), SO_2 (which is a form of SO_X), PM_{10}, $PM_{2.5}$, and lead. USEPA 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. USEPA's primary role at the state level is to oversee the state air quality programs. USEPA 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)

CARB, a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California by administering the 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 NO_2 and SO_2 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 ACPD 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 California Code of Regulations 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 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 tons per year to 10 tons per year. 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 USEPA participation in the permitting process and requires additional record keeping and reporting by businesses, which results in significant administrative requirements.

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 air quality. The policies and implementation measures in the Kern County General Plan related to air 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

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

1.10: General Provisions; 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:

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.

Measure J: The County should include PM_{10} 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.

In 2006, Kern County Planning Department issued its own *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*. The document provides specific guidance for County-prepared EIRs, including air quality issues to be considered, analytical approaches and resources, and a cumulative impact analysis methodology. In general, Kern County defers to SJVAPCD on issues related to assessing air quality impacts (e.g., modeling, odors, risk assessment). In addition, Kern County recommends an assessment of visibility impacts for all industrial projects and any other projects that have components that could generate dust or emissions related to visibility. Kern County also requires a list of projects located within a 1-mile and 6-mile radius of the project boundary.

San Joaquin Air Pollution Control District

The SJVAPCD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the SJVAB. The SJVAPCD jurisdiction includes all of 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 O_3 and particulate matter standards, the most recent of which include the *2014 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan* (SJVAPCD 2014b), *2013 Plan for the Revoked 1-Hour Ozone Standard* (SJVAPCD 2013), *2007 PM_{10} Maintenance Plan and Request for Redesignation* (SJVAPCD 2007), *2012 $PM_{2.5}$ Plan* (SJVAPCD 2012), and *2015 Plan for the 1997 $PM_{2.5}$ Standard* (SJVAPCD 2015c).

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 (KCOG) is designated the Regional Transportation

Planning Agency and Metropolitan Planning Organization for Kern County. In that capacity, KCOG 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 USEPA 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. KCOG 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 federally approved Federal Transportation Improvement Program (FTIP) and the 2018 RTP. The conformity findings conclude that the FTIP and RTP result in emissions that are less than the emission budgets of baseline emissions for CO, VOC, NO_X, and PM_{10} (KCOG 2016).

4.3.4 Impacts and Mitigation Measures

Methodology

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 County Council of Governments (KCOG) 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

Construction

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 off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction of the proposed 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. 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 scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the project applicant. For purposes of estimating project emissions, and based on information provided by the project applicant, it is assumed that construction of the project would commence in January 2022[1] and would last approximately 12 months, ending in December 2022. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Phase One (200 MW)
  - Grading 2 months (January 2022–February 2022)
  - Gravel roads: 2 months (March 2022–April 2022)
  - Trenching/Electrical: 2 months (May 2022-–June 2022)
  - Pile Driving/Panel Assembly: 6 months (July 2022–December 2022)
  - Substation Construction: 5 months (July 2022 – November 2022)
  - Gen-Tie Line: 4 months (July 2022 – November 2022)

For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Delivery of material and supplies would reach the site via on-road truck delivery. The majority of the truck deliveries would be for the PV system installation, as well as any aggregate material that may be required for road base. EMFAC2017 emissions factors were used to estimate mobile source emissions from solar panel delivery, while AP-42 emission factors were used to calculate fugitive dust emissions from travel on on-site unpaved surfaces. Solar panels are assumed to be delivered from the Port of Long Beach or the Port of Los Angeles, resulting in a 110-mile delivery trip length. The construction equipment mix and vehicle trips used for estimating the project-generated construction emissions are shown in Table 4.3-4, *Construction Scenario Assumptions*. See Appendix C for additional details.

TABLE 4.3-4: CONSTRUCTION SCENARIO ASSUMPTIONS

	One-way Vehicle Trips			Equipment		
Construction Phase	**Average Daily Worker Trips**	**Average Daily Vendor Truck Trips**	**Total Haul Truck Trips**	**Equipment Type**	**Quantity**	**Usage Hours**
Grading	75	0	188	Excavators	4	8
				Graders	2	8
				Off-Highway Trucks	9	4
				Rubber Tired Dozers	13	8
				Scrapers	4	8
				Skid Steer Loaders	16	4

[1] The analysis assumes a construction start date of January 2022, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant and GHG emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

TABLE 4.3-4: CONSTRUCTION SCENARIO ASSUMPTIONS

	One-way Vehicle Trips			Equipment		
Construction Phase	**Average Daily Worker Trips**	**Average Daily Vendor Truck Trips**	**Total Haul Truck Trips**	**Equipment Type**	**Quantity**	**Usage Hours**
				Tractor/Loader/Backhoe	3	8
Gravel Roads	13	0	188	Crawler Tractors	4	8
Trenching/electrical	50	0	188	Crawler Tractors	4	8
				Excavators	4	8
				Off-Highway Trucks	2	4
				Rough Terrain Forklifts	8	8
Pile Driving/panel Assembly	100	0	936	Bore/Drill Rigs	5	9.6
				Cement and Mortar Mixers	0	9.6
				Crane	0	9.6
Substation Construction	0	0		Bore/Drill Rigs	3	8
				Cranes	3	8
				Off-Highway Trucks	8	8
				Excavators	1	8
				Forklifts	1	8
				Skid Steer Loaders	1	8
				Tractor/Loader/Backhoe	1	8
Gen-Tie Line	0	0		Bore/Drill Rigs	3	8
				Cranes	3	4
				Forklifts	2	8
				Off-Highway Trucks	14	8
				Other Industrial Equipment	2	4
				Rubber Tired Dozers	1	4
				Tractor/Loader/Backhoe	2	8

NOTE: See Appendix C for details**.**

Operation

County guidance states that an air quality assessment should include estimates of long-term operational emissions in tons per year. Per the County's guidance, this report includes a summary of the unmitigated and mitigated emissions, with a comparison to Kern County CEQA thresholds in a table format within the impact analysis.

Emissions from the operational phase of the project were estimated using the CalEEMod version 2016.3.2 and include area, and energy source emissions. The following paragraphs describe these sources in detail.

Area Sources

CalEEMod emission factors were used to estimate operational emissions from area sources, which include architectural coatings. ROG off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers using during building maintenance. The ROG evaporative emissions from application of residential and nonresidential surface coatings were calculated based on the ROG emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The ROG emission factor is based on the ROG content of the surface coatings. The reapplication rate of 10% of area per year is assumed. Based on the type of structure for the energy storage structure, it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating (CAPCOA 2013).

Energy Sources

Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use were only quantified for GHGs, since criteria pollutant emissions occur at the site of the power plant, which is typically off site.

Mobile Sources

Water trucks would clean the solar panels up to four times per year, which would be a source of ROG, NO_X, SO_X, CO, PM_{10} and $PM_{2.5}$ exhaust emissions. It is estimated that five 5,000-gallon water trucks would travel approximately 542 miles per cleaning. EMFAC2017 emission factors were used to estimate off-site and on-site water truck exhaust emissions. Additionally, on-site water truck travel is a source of PM fugitive emissions; fugitive dust from water truck travel over on-site unpaved surfaces was estimated with AP-42 emissions factors (United Stated Environmental Protection Agency (USEPA) 2006).

Project-related transportation activities from employees would generate mobile source ROG, NO_X, SO_X, CO, PM_{10} and $PM_{2.5}$ exhaust emissions. It is anticipated that 11 full time employees working on the project site throughout operations, and the CalEEMod default worker trip length of 16.8 miles was used as it is consistent with the distance from the project site to the center of Bakersfield, the nearest large city to the project site. EMFAC2017 emission factors were used to estimate off-site and on-site employee vehicle exhaust emissions. As the make of employee vehicles is not known, a 50:50 split of emissions for light duty autos and light duty trucks was applied when estimating emissions. Additionally, on-site employee vehicle travel is a source of PM emissions; fugitive dust from employee vehicle travel over on-site unpaved surfaces was estimated with AP-42 emissions factors (USEPA 2006).

Health Risk Assessment

This EIR section includes a HRA associated with construction emissions and followed the methodologies prescribed in the California Environmental Protection Agency/Office of Environmental Health Hazard Assessment's (OEHHA's) *Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015), which was adopted in 2015 replacing the previous 2003 guidance manual. For risk assessment purposes, PM_{10} in diesel exhaust is considered DPM, originating mainly from off-road equipment operating at a defined location for a given length of time at a given distance from sensitive receptors. Less-intensive, more-dispersed emissions result from on-road vehicle exhaust (e.g., heavy-duty diesel trucks). These emissions could result in elevated concentrations of DPM at nearby receptors, which could lead to an increase in the risk of cancer or other health impacts.

Consequently, an HRA was performed to determine the extent of increased cancer risks and chronic health indices at the maximally exposed receptors from project construction.

The AERMOD parameter discussion included for the Ambient Air Quality Impacts section above also applies to the HRA. The dispersion of DPM was modeled using the AERMOD dispersion model, along with meteorological data provided by the CARB for the Mojave Airport, and the resultant health impacts were calculated using the CARB Hotspots Analysis and Reporting Program, Version 2 (HARP 2), which incorporates reference exposure levels (RELs) and cancer potency factors, which are periodically updated, and health effects calculations based on the 2015 OEHHA guidance manual. Accordingly, these risk assessments evaluate and reflect conservative, health-protective methodologies to assess health impacts to adults as well as infants, children, and other sensitive subpopulations. For the residential health risk associated with construction, the HRA assumes exposure would start in the third trimester of pregnancy and occur 8 hours per day, 5 days per week, for 2-years to account for the short-term construction activity duration.

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 1-hour, 3-hour, 8hour and 24-hour average concentrations of PM_{10} 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. 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 results are provided in Appendix C.

The dispersion modeling was performed using the American Meteorological Society/EPA Regulatory Model (AERMOD), which is the model SJVPACD requires for atmospheric dispersion of emissions. Off-site concentrations were modeled for the construction phase with the estimated project emissions in order to determine compliance with the CAAQS and NAAQS. Principal parameters of AERMOD for the project construction include the following:

- **Dispersion Modeling:** The air dispersion model used was AERMOD, with the Lakes Environmental Software implementation/user interface, AERMOD View, Version 9.9.5. AERMOD was run with all sources emitting unit emissions (1 g/s) to obtain the "X/Q" values. X/Q is a dispersion factor that is the average effluent concentration normalized by source strength, and is used as a way to simplify the representation of emissions from many sources. The X/Q values of ground-level concentrations (GLCs) were determined for construction emissions using AERMOD and the maximum concentrations determined for the 1-hour, 24-hour, and annual averaging periods.
- **Meteorological Data:** The latest 5-year meteorological dataset (2013–2017) from the SJVACPD-approved AERMET U Star meteorological dataset were used.
- **Urban and Rural Options:** Urban areas typically have more surface roughness and structures and low-albedo surfaces that absorb more sunlight—and thus more heat—relative to rural areas. The rural dispersion option was selected due to the undeveloped nature of the project site.
- **Modeling Options:** The modeling included the use of standard regulatory default options.
- **Terrain Characteristics:** The terrain in the vicinity of the project site is generally flat. Digital elevation model files were imported into AERMOD so that complex terrain features were evaluated as appropriate.

- **Modeling Grid:** For the AAQA, a nested grid of sensitive receptors was evaluated to capture maximum ambient pollutant impacts. This telescoping grid of receptors was set up with the following resolutions:
  - 25-meter spacing on the facility boundary
  - 25-meter spacing from facility boundary to 100 meters
- **Discrete Receptors:** Sensitive receptors include hospitals, schools, parks, playgrounds, daycare centers, nursing homes, convalescent facilities, and residential areas. Proximate sensitive receptors are scattered rural residential land uses.

CO Hotspots

The County has also adopted criteria for determining if a quantitative CO hotspot analysis would be required. The guidance states that a CO hotspot analysis using the CALINE4 model would be required for the following project conditions:

- LOS of an intersection or roadway is identified as LOS E or worse.
- Signalization and/or channelization is added to an intersection.
- Sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or signalization.

If no such conditions exist, then the assessment must include that information and note the reasons the CO hotspot analysis was not required.

Valley Fever Exposure

The Valley Fever fungal spores, Coccidioides immitis, live in the top 2 to 12 inches of soil in many parts of the state, including parts of Kern County. When fungal spores are present, any work activity that disturbs the soil, such as digging, grading, or other earth-moving operations, or vehicle operation on dirt roads, can cause the spores to become airborne, thereby increasing the risk of Valley Fever exposure (California Department of Industrial Relations 2013). All workers on sites where the fungus is present, and who are exposed to dusty conditions and wind-blown dusts, are at increased risk of becoming infected.

The fungal spores are too small to be seen by the naked eye, and there is no reliable way to test the soil for spores before working in a particular place (California Department of Public Health 2013). Accordingly, the Valley Fever analysis assumes the potential presence of the fungal spores within the project site. The potential for Valley Fever exposure 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.

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.

Per the Kern County guidelines, a visibility analysis is not required since the project is not a large industrial stationary-source project or a mining project, and it would not have long-term operational components that could generate substantial dust or emissions plumes related to visibility.

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. 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. However, 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 (CDCDMG 2000). Therefore, impacts associated with exposure of construction workers and nearby sensitive receptors to asbestos are not anticipated and no further analysis is required.

Odors

The SJVAPCD's GAMAQI states "An analysis of potential odor impacts should be conducted for both of the following two situations:

1. Generators – projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
2. Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources." (SJVAPCD 2015)

The GAMAQI also states, "The District has identified some common types of facilities that have been known to produce odors in the San Joaquin Valley Air Basin. These are presented in Table 6 (Screening Levels for Potential Odor Sources), along with a reasonable distance from the source within which, the degree of odors could possibly be significant. [Table 6] can be used as a screening tool to qualitatively assess a project's potential to adversely affect area receptors." (SJVAPCD 2015).

Thresholds of Significance

Kern County

The Kern County CEQA Implementation Document and Kern County Environmental Checklist includes items taken from previous versions of CEQA Guidelines Appendix G. 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 have a significant adverse effect on 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, would implementation of the project would exceed any of the following adopted thresholds:

   i. SJVAPCD:

   - Operational and Area Sources:
     - 10 tons per year for ROG
     - 10 tons per year for NO_X
     - 15 tons per year for PM_{10}
   - Stationary Sources as Determined by District Rules
     - Severe Nonattainment: 25 tons per year
     - Extreme Nonattainment: 10 tons per year

c. Expose sensitive receptors to substantial pollutant concentrations;

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

San Joaquin Valley Air Pollution Control District

The SJVAPCD "Guidance for Assessing and Mitigating Air Quality Impacts" has established emissions-based thresholds of significance for criteria pollutants (SJVAPCD 2015). As shown in Table 4.3-5, *San Joaquin Valley Air Pollution Control District California Environmental Quality Act Significance Thresholds for Criteria Pollutants*, the SJVAPCD has established significance thresholds for construction emissions and operational permitted and non-permitted equipment and activities, and it recommends evaluating impact significance for these categories separately. These thresholds of significance are based on a calendar-year basis, although construction emissions are assessed on a rolling 12-month period.

TABLE 4.3-5: SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT CALIFORNIA ENVIRONMENTAL QUALITY ACT SIGNIFICANCE THRESHOLDS FOR CRITERIA POLLUTANTS

		Operational Emissions (tons per year)	
Pollutant	**Construction Emissions (tons per year)**	**Permitted Equipment and Activities**	**Non-Permitted Equipment and Activities**
ROG	10	10	10
NO_x	10	10	10
CO	100	100	100
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

SOURCE: SJVAPCD 2015b

In addition to the annual emissions mass thresholds, the SJVAPCD has also established screening criteria to determine whether a project would result in a CO hotspot at affected roadway intersections (SJVAPCD 2015). If neither of the following criteria are met at any of the intersections affected by the project, no potential to create a violation of the CO standard would occur:

- A traffic study for the project indicates that the level of service ("LOS") on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or LOS F.
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more or more intersections in the project vicinity.

Toxic Air Contaminants

The SJVAPCD has established thresholds of significance for combined toxic air contaminant ("TAC") emissions from the operations of both permitted and non-permitted sources (SJVAPCD 2015). Projects that have the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the maximally exposed individual equals or exceeds 20 in 1 million people.[2]
- Hazard Index[3] for acute and chronic noncarcinogenic TACs equals or exceeds 1 for the maximally exposed individual.

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 project 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 comply with this requirement. CARB reviewers approve or amend the document and forward the plan to USEPA for final review and approval within the SIP.

Implementation of the project would generate both temporary (construction) and long-term (operational) emissions, which could conflict with or obstruct with an applicable AQMP. Project impacts would be potentially significant before mitigation.

[2] The cancer risk threshold was increased from 10 to 20 in 1 million with approval of APR 1906 (Framework for Performing Health Risk Assessments) on June 30, 2015.

[3] Non-cancer adverse health impact, both for acute (short-term) and chronic (long-term) health effects, is measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentration from a project to a published reference exposure level that could cause adverse health effects as established by the Office of Environmental Health Hazard Assessment. The ratio (referred to as the hazard quotient) of each noncarcinogenic substance that affects a certain organ system is added together to produce an overall hazard index for that organ system.

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. Each project should also demonstrate consistency with the SJVAPCD's adopted AQMP for ozone and PM_{10}. The SJVAPCD is required to submit a "Rate of Progress" document to CARB that demonstrates past and planned progress toward reaching attainment for all criteria pollutants. 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 AQMP prepared for the San Joaquin Valley by SJVAPCD complies with this requirement. CARB reviewers approve or amend the document and forward the plan to USEPA 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:

1. *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 O_3 standard.
2. *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.
3. *The project must contain in its design all reasonably available and feasible air quality control measures.* The project incorporates Regulation VIII dust measures and will comply with the ISR rule (Rule 9510).

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 any 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 of vehicles that are licensed through the state and whose emissions are already incorporated into CARB's emissions inventory.

Construction

The project would comply with all applicable SJVAPCD rules and regulations. The project would not exceed SJVAPCD significance thresholds on an annual basis for VOCs, CO, SO_x, and $PM_{2.5}$. However, construction of the project would exceed the SJVAPCD annual significance thresholds for NO_x, and PM_{10}. However, with the required compliance of the project with SJVAPCD's Rule 9510 (ISR Rule), which requires projects to reduce NO_X emissions by 20 percent, the total NO_X emissions generated by the project during construction would be below SJVAPCD's threshold of significance. Therefore, the project would not result in emissions of a magnitude that would obstruct the air quality planning goals set forth by the SJVAPCD and would have a less-than-significant impact. During construction, the project would

incorporate Mitigation Measures MM 4.3-1 through MM 4.3-9 in order to further reduce impacts from fugitive dust, including applying dust suppressant material; limiting vehicle speeds; and watering exposed areas during construction, among others. The NO_x and PM_{10} exhaust emissions from construction equipment with a horsepower rating greater than 50 horsepower would also be reduced by using newer, lower polluting construction equipment and cleaner fuels. With implementation of these mitigation measures, the construction emissions for NO_x and PM_{10} would be reduced, as shown for Impact 4.3-2.

Because the project does not include any stationary sources, the stationary control measures identified in the SJVAPCD's *2016 Ozone Plan* and Kern County's *2017 Ozone Attainment Plan* are not applicable. Similarly, the project's construction emissions from heavy-duty, off-road equipment would not exceed the SJVAPCD's significance thresholds. The mobile source control measures pertaining to heavy-duty, off-road equipment identified in the SJVAPCD's *2016 Ozone Plan* are also not applicable. Therefore, the project's construction activities would neither conflict with nor obstruct implementation of the applicable air quality plans and no impacts would occur.

Overall, based on the above, with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-6 and MM 4.3-8 through MM 4.3-9, any potential impacts to criteria pollutants designated as nonattainment within the SJVAPCD would be reduced and construction of the project would not result in a conflict with or obstruct implementation of applicable air quality plans. Therefore, impacts would be less than significant.

Operation

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. When compared against the current zoning of the project site that would allow for the development of agricultural uses, the solar facility would result in less operational emissions from mobile and area sources that would be generated. The only source of operational emissions associated with the project would be those generated from mobile sources traveling to and from the project area to perform standard operational activities by operational employees, routine maintenance and occasional panel washing. Long-term emissions from the project would primarily consist of sporadic vehicular emissions from employees, which would be minimal and would not result in a substantial increase in emissions.

As shown for Impact 4.3-2, the project would not exceed the SJVAPCD operational threshold for any criteria air pollutant. Operational emissions would be further reduced with implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-7, which would be implemented to further reduce impacts to criteria pollutants designated as nonattainment within the SJVAPCD.

Regarding operational mobile emissions, TAZs are basic spatial units of analysis facilitating the ability of transportation planners to forecast changes in commuting patterns, trip volumes, and modes of travel, and to develop plans to meet the changing demands for transportation facilities and capacities. Due to the intermittent nature of operational employee trips and operational activities, there would be no measurable changes in traffic associated with development of the project. The project area is considered generally rural and agricultural. The nearest community is approximately 3 miles away. There are no intersections or roadways identified as LOS E or worse associated with the project, as discussed further in Section 4.15, *Transportation*, of this EIR. Additionally, there would be no signalization or channelization added to an intersection, as part of this project. Therefore, the project would have a less-than-significant impact on the Kern County TAZ.

Further, the Kern COG's Regional Conformity Analysis Determination demonstrates that the regional transportation expenditure plans (*Destination 2030 Regional Transportation Plan and Federal Transportation Improvement Program*) in the Kern County portion of the San Joaquin Valley air quality attainment areas would not hinder the efforts set out in CARB's SIP for each area's non-attainment pollutants (ozone, CO, and PM_{10}). The analysis uses an adopted regional growth forecast, governed by both the adopted *Kern COG Policy and Procedure Manual and a Memorandum of Understanding* between the County of Kern and Kern COG.

The growth represented by the project in the form of additional workers is negligible compared to the population growth anticipated by the Kern COG 2018 RTP/SCS, and the project incorporates all reasonably available and feasible air quality control measures; the project can therefore be determined in conformity with the AQMP.

Since the project is consistent with the 2018 RTP/SCS, and 2018 RTP/SCS projections are incorporated into the SIP, the project is also consistent with the SIP.

The project shows conformity with CARB's three step approach and the project growth was anticipated by the Kern COG RTP/SCS and incorporated into the AQMP. With implementation of applicable operational Mitigation Measures provided below, which would further reduce impacts to criteria pollutants currently designated as nonattainment within the SJVAPCD, operation of the project would not result in a conflict with or obstruct implementation of applicable air quality plans. Therefore, impacts would be less than significant.

Furthermore, the solar power generation system of the project would function to reduce the air pollutant emissions within the San Joaquin Valley Air Basin to the extent that the power generated would offset power production from fossil fueled power plants within (or contributory to) the San Joaquin Valley Air Basin. This power production is not projected within the existing air quality plans, and so the project would further aid in reducing air pollutant emissions and increase the potential for attainment of the Ozone Attainment Plan. Therefore, the project would not conflict with the SJVAPCD's Ozone Attainment Plan. As project operational emissions would also not exceed the SJVAPCD's significance thresholds, implementation of the project would not obstruct implementation of an air quality plan during operation. Therefore, operational impacts would be less than significant.

Decommissioning

The project has an anticipated operational life of up to 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. The project would 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 would 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. However, impacts would be less than those of construction, as no grading would occur. Mitigation implemented during construction would also be implemented during decommissioning. Therefore, as with

construction, with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9, any potential impacts would be reduced and decommissioning of the project would not result in a conflict with or obstruct implementation of applicable air quality plans. Therefore, impacts would be less than significant.

Mitigation Measures

MM 4.3-1: The project shall continuously comply with the following: Construction and operation of the project shall be conducted in compliance with applicable rules and regulations set forth by the San Joaquin Valley Air Pollution Control District. Dust control measures outlined below shall be implemented where they are applicable and feasible. The list shall not be considered all-inclusive, and any other measures to reduce fugitive dust emissions not listed shall be encouraged.

a. Land Preparation, Excavation and/or Demolition. The following dust control measures shall be implemented:

   1. All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas. Watering shall take place a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations.

   2. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), if disturbed material is easily windblown, or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property.

   3. All fine material transported off site shall be either sufficiently watered or securely covered to prevent excessive dust.

   4. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.

   5. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.

   6. Where acceptable to the Kern County Fire Department, weed control shall be accomplished by mowing instead of disking, thereby, leaving the ground undisturbed and with a mulch covering.

b. Site Construction. After clearing, grading, earth moving and/or excavating is completed within any portion of the project sites, the following dust control practices shall be implemented:

   1. Once initial leveling has ceased, all temporarily open and inactive soil areas within the construction site shall be (1) seeded and watered until plant growth is evident, (2) treated with a dust palliative, or (3) watered twice daily until soil has sufficiently crusted to prevent fugitive dust emissions.

   2. Dependent on specific site conditions (season and wind conditions), revegetation shall occur in those areas so planned as soon as practical after installation of the solar panels. A native seed mix of grass and flowers shall also be added to the spread topsoil to enhance regrowth.

3. All active disturbed soil areas shall be sufficiently watered at least twice daily or have dust palliatives applied to prevent excessive dust.

c. Vehicular Activities. During all phases of construction, the following vehicular control measures shall be implemented:

1. Onsite vehicle speed shall be limited to 15 miles per hour.

2. All areas with vehicle traffic shall be paved, treated with dust palliatives or watered a minimum of twice daily.

3. Streets adjacent to the project sites shall be kept clean, and project-related accumulated silt shall be removed.

4. Access to the project sites shall be by means of an apron into the project sites from adjoining surfaced roadways. The aprons shall be surfaced or treated with dust palliatives. If operating on soils that cling to the wheels of vehicles, a grizzly, wheel washer, or other such device shall be used on the road exiting the project sites, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires.

MM 4.3-2: Prior to issuance of any grading permit, the project proponent shall submit a Site-Specific Dust Control Plan for review and approval by the Kern County Planning and Natural Resources Department. The Site-Specific Dust Control Plan shall serve to minimize fugitive dust emissions during project construction. The Site-Specific Dust Control Plan shall take into consideration grading and construction schedule, seasonal winds, site-specific wind patterns and soil conditions to ensure adequate measures are implemented to manage fugitive dust. The Site-Specific Dust Control Plan shall:

a. Identify a comprehensive grading schedule for the entire project site. When feasible, grading activities shall be minimized to those areas necessary for project access and installation of solar panels and other areas of infrastructure associated with the solar facility.

b. The Site-Specific Dust Control Plan shall identify, in addition to those measures required by the air district, all measures being undertaken during construction activities and operational activities to ensure fugitive dust being blown off site is minimized. Measures may include, but are not limited to:

1. Use of water trucks as required for the expected level of winds in the area.

2. Use of dust suppressant (i.e., soil binders or mulch).

3. Pre-seeding and irrigating prior to construction to create vegetation with useful root structures.

4. Construction of dust screening in appropriate locations around the project site (i.e., fence slats or mesh screening).

5. A copy of the approved Site-Specific Dust Control Plan shall be kept at the on-site construction office and all measures included in the Site-Specific Dust Control Plan shall be included on all Grading Plans issued for the project by the Kern County Public Works Department.

MM 4.3-3: Prior to issuance of any building and grading permits, the project proponent shall provide the Kern County Planning and Natural Resources Department with proof that an Indirect Source Review application has been approved by the San Joaquin Valley Air Pollution Control District.

MM 4.3-4: **Valley Fever.** Prior to ground disturbance activities, the project proponent shall implement the following Valley Fever Provisions:

a. Provide evidence to the Kern County Planning and Natural Resources Department that the project operator and/or construction manager has developed a "Valley Fever Training Handout", training, and schedule of sessions for education to be provided to all construction personnel. All evidence of the training session materials, handout(s) and schedule shall be submitted to the Kern County Planning and Natural Resources Department within 24 hours of the first training session. Multiple training sessions may be conducted if different work crews will come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. The training may be administered using video or other electronic media. The evidence submitted to the Kern County Planning and Natural Resources Department regarding the "Valley Fever Training Handout" and Session(s) shall include the following:

    1. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.
    2. Distribution of a written flier or brochure that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever.
    3. Training on methods that may help prevent Valley Fever infection.
    4. A demonstration to employees on how to use personal protective equipment, such as respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition of symptoms and earlier treatment of Valley Fever. Where respirators are required, the equipment shall be readily available and shall be provided to employees for use during work. Proof that the demonstration is included in the training shall be submitted to the county. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.

b. The project proponent also shall consult with the Kern County Health Services Department to develop a Valley Fever Dust Management Plan that addresses the potential presence of the Coccidioides spore and mitigates for the potential for Coccidioidomycosis (Valley Fever). Prior to issuance of permits, the project operator shall submit the Plan to the Kern County Public Health Department for review and approval. The Plan shall include a program to evaluate the potential for exposure to Valley Fever from construction activities and to identify appropriate safety procedures that shall be implemented, as needed, to minimize personnel and public exposure to potential Coccidioides spores. Measures in the Plan shall include the following:

    1. Provide High-Efficiency Particulate Air filters for heavy equipment equipped with factory enclosed cabs capable of accepting the filters. Require contractors utilizing applicable heavy equipment to furnish proof of worker training on proper use of

applicable heavy equipment cabs, such as turning on air conditioning prior to using the equipment.

2. Provide communication methods, such as two-way radios, for use in enclosed cabs.
3. Require National Institute for Occupational Safety and Health- approved half-face respirators equipped with minimum N-95 protection factor for use during worker collocation with surface disturbance activities, as required per the hazard assessment process.
4. Cause employees to be medically evaluated, fit-tested, and properly trained on the use of the respirators, and implement a full respiratory protection program in accordance with the applicable California Occupational Safety and Health Administration Respiratory Protection Standard (8 California Code of Regulations Section 5144).
5. Provide separate, clean eating areas with hand-washing facilities.
6. Install equipment inspection stations at each construction equipment access/egress point. Examine construction vehicles and equipment for excess soil material and clean, as necessary, before equipment is moved off site.
7. Train workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor.
8. Work with a medical professional to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever.
9. Work with a medical professional, in consultation with the County Health Services Department, to develop an educational handout for on-site workers and surrounding residents within 3 miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for exposure is available. Prior to construction permit issuance, this handout shall have been created by the project operator and reviewed by the project operator and reviewed by the County. No less than 30 days prior to any work commencing, this handout shall be mailed to all existing residences within 3 miles of the project boundaries.
10. When possible, position workers upwind or crosswind when digging a trench or performing other soil-disturbing tasks.
11. Prohibit smoking at the worksite outside of designated smoking areas; designated smoking areas will be equipped with handwashing facilities.
12. Post warnings on-site and consider limiting access to visitors, especially those without adequate training and respiratory protection.

MM 4.3-5: The project shall continuously comply with the following: The project proponent and/or its contractors shall implement the following measures during construction of the project:

a. All equipment shall be maintained in accordance with the manufacture's specifications.

b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for extended periods of time.

c. Construction equipment shall operate longer than eight cumulative hours per day.

d. Electric equipment shall be used whenever possible in lieu of diesel- or gasoline-powered equipment.

e. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOX emissions.

f. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines.

g. Tier 3 engines shall be used on all equipment when available.

MM 4.3-6: The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes:

a. Any unpaved access roads used by employees and/or for deliveries shall be paved or effectively stabilized using soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than the California Air Resources Board-approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation.

b. The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes.

c. Traffic speeds on unpaved roads shall be limited to no more than 15 miles per hour. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s).

MM 4.3-7: The project proponent shall continuously comply with the following measures during operation of the project to control emissions from the on-site dedicated equipment (equipment that would remain on-site each day):

a. All onsite off-road equipment and on-road vehicles for operation/maintenance shall be new equipment that meets the recent the California Air Resources Board engine emission standards or alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, as appropriate.

b. All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.

c. All equipment engines shall be maintained in good operating condition and in tune per manufacturers' specification.

MM 4.3-8: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading), including decommissioning, the project proponent shall provide written notice to the public through mailing a notice to all parcels within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include the construction schedule, a telephone number and email address where complaints and questions can be registered. Additionally, a minimum of one sign, legible at a distance of 50 feet, shall also be posted at the construction sites or adjacent to the nearest public access to the main construction entrances throughout

construction activities which include the construction schedule (updated as needed) and a telephone number where complaints can be registered. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.

MM 4.3-9: Prior to the issuance of any grading or building permit, the project proponent shall establish a "construction coordinator" and submit written documentation which includes their phone number, email address and mailing address. The construction coordinator shall be responsible for the following:

a. 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.

b. Ensuring all appropriate construction notices have been made available to the public and that all appropriate construction signs have been installed.

c. Maintaining an ongoing up-to-date log of all construction related complaints (i.e., blowing dust, inability to access parcels, etc.) during project construction activities. The log shall include the nature of the complaint and the measures that were undertaken to address the concerns. Upon request, the construction coordinator shall provide the log to the Planning and Natural Resources Department no later than three business days from request.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.3-2: The project would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Construction Emissions

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 off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

As discussed previously, criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod and EMFAC 2017. Construction emissions were calculated for the estimated worst-case day over the construction period associated with each phase and reported as the maximum daily emissions estimated during 2022. Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by the project applicant and is intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed project information was not available.

Implementation of the project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, and architectural coatings. Entrained dust results from the exposure of earth

surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The project would be required to comply with SJVAPCD Regulation VIII to control dust emissions generated during the grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites three times per day depending on weather conditions. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of ROGs, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and application of asphalt pavement would also produce ROG emissions. Additionally, Mitigation Measures MM 4.3-1 through MM 4.3-9 would be implemented to further reduce emissions.

Table 4.3-6, *Estimated Maximum Annual Construction Criteria Air Pollutant Emissions*, presents the estimated maximum annual construction emissions generated during construction of the project. Details of the emission calculations are provided in Appendix A.

TABLE 4.3-6: ESTIMATED MAXIMUM ANNUAL CONSTRUCTION CRITERIA AIR POLLUTANT EMISSIONS

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Year	**Tons Per year**					
2022	1.33	9.93	9.61	0.03	6.49	1.28
SJVAPCD Threshold	**10**	**10**	**100**	**27**	**15**	**15**
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

NOTES: CO = carbon monoxide; NO_x = oxides of nitrogen; SJVAPCD = San Joaquin Valley Air Pollution Control District; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides; ROG = reactive organic gases

See Appendix C for complete results.

As shown in Table 4.3-6, the project would not exceed the SJVAPCD annual emissions thresholds for ROG, NO_x, CO, SO_x, PM_{10} or $PM_{2.5}$ in 2022. Therefore, impacts would be less than significant.

Operation Emissions

The project involves development of a 300 MW PV solar energy facility with an energy storage system and gen-tie line. Operation of the project would generate ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from maintenance vehicles. Pollutant emissions associated with long-term operations were quantified using CalEEMod and EMFAC 2017. Project-generated mobile source emissions were estimated based on project-specific trip rates.

Table 4.3-7, *Estimated Maximum Annual Operational Criteria Pollutant Emissions*, presents the maximum daily mobile source emissions associated with operation (year 2023) of the project. The values shown are the maximum daily emissions results from the operation of the project. Details of the emission calculations are provided in Appendix C.

TABLE 4.3-7: ESTIMATED MAXIMUM ANNUAL OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
Area	0.06	0.01	0.01	<0.01	<0.01	<0.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.01	0.10	0.05	<0.01	2.73	0.28
Total Annual Emissions	**0.06**	**0.02**	**0.06**	**<0.01**	**2.73**	**0.28**
SJVAPCD Threshold	**10**	**10**	**100**	**27**	**15**	**15**
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

NOTES: CO = carbon monoxide; NO_x = oxides of nitrogen; SJVAPCD = San Joaquin Valley Air Pollution Control District; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides; ROG = reactive organic gases

Operational emissions in year 2023 presented. See Appendix C for complete results.

As shown in Table 4.3-7, the combined annual area, energy, and mobile source emissions would not exceed the SJVAPCD operational thresholds for ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$. Although operational emissions would remain below SJVAPCD thresholds, Mitigation Measure MM 4.3-1 and MM 4.3-7 would be implemented which would further reduce emissions. Impacts associated with project-generated operational criteria air pollutant emissions would be less than significant.

Mitigation Measures

No mitigation measures required.

Level of Significance

Impacts would be less than significant.

Impact 4.3-3: 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 discussed previously, the nearest sensitive receptors are located adjacent to the site and approximately 0.4miles miles from the project site.

Valley Fever

The project has the potential to generate fugitive dust and suspend Valley Fever spores with the dust that could then reach nearby sensitive receptors. It is possible that onsite workers could be exposed to valley fever as fugitive dust is generated during construction. The project would be required to comply with Rule 8021 Section 6.3, which requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would reduce fugitive dust impacts to less than significant for all construction phases of the

project, which would also control the release of the *Coccidioides immitis* fungus from construction activities. Dust control measures, including preparation and implementation of a Dust Control Plan, would also be required through implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4 and MM 4.3-6; however, exposure to the *Coccidioides immitis* fungus would be potentially significant. Mitigation Measure MM 4.3-4 is provided to further reduce specific impacts associated with Valley Fever and to protect on-site construction workers and nearby receptors. In addition, Mitigation Measure MM 4.3-11 would be required and includes payment of a onetime fee for public awareness programs related to valley fever. Therefore, the exposure to Valley Fever would be minimized and impacts would be reduced to less than significant levels with implementation of the mitigation measures identified above.

Visibility Impacts

Kern County has established criteria to determine if a project would potentially result in a visibility impact; however, the SJVAPCD has not established guidance to address visibility in CEQA documents. Per the Kern County guidelines, a visibility analysis is not required since the project is not a large industrial stationary source project or a mining project, and it would not have long-term operational components that could generate dust or emissions plumes related to visibility. Compliance with regulation VIII, including implementation of a dust control plan, is sufficient mitigation to reduce air quality effects from construction-related PM_{10} emissions to a less-than-significant level. The project's potential to expose sensitive receptors to substantial pollutant concentrations associated with potential visibility impacts would be less than significant and no mitigation is required.

Toxic Air Contaminants

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. The primary TAC of concern for this project would be diesel particulate matter emitted within the project site from the construction and operation phases of the project. Based on the distance of sensitive receptors to the project site, an HRA was performed to determine the potential cancer risk to the closest sensitive receptors of the project site due to diesel particulate matter emissions resulting from diesel construction equipment and diesel trucks.

Construction Health Risk Assessment

OEHHA approved the *Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments* in March 2015. Based on the HRA results included in Insight Environmental/Trinity AQIA, the maximally exposed individual residence (MEIR) would be located directly north of the project boundary at Universal Transverse Mercator (UTM) coordinates 310877.22m E, 3885611.88m N. Potential health risks at the MEIR resulting from construction activities are shown in Table 4.3-8, *Construction Related Health Risk Assessment*.

TABLE 4.3-8: CONSTRUCTION RELATED HEALTH RISK ASSESSMENT

Receptor	Cancer Risk (per Million)	Chronic Hazard Index
Unmitigated		
MEIR	3.41	0.0005
SJVACPD Significance Criteria	**20**	**1**
Exceed Threshold?	**No**	**No**

NOTE: MEIR = Maximally Exposed Individual Resident; SJVAPCD = San Joaquin Valley Air Pollution Control District
Source: Insight Environmental/Trinity 2021.

DPM exposure at receptors was modeled with AERMOD, the results of which were then input into HARP 2 to generate health risk estimates. For the MEIR, exposure was assumed to begin during the third trimester of pregnancy for a duration of 8 hours per day, 5 days per week, for 3-years to account for the short-term construction activity duration.

As depicted in Table 4.3.8, unmitigated project construction would emit TACs that would result in cancer risk and chronic hazard index at the MEIR below the SJVACPD thresholds of 20 in a million and 1, respectively. Overall, impacts associated with the project's potential to expose sensitive receptors to substantial TACs due to the project-generated construction emissions would be less than significant.

Operations

As previously discussed, health impacts due to DPM are largely related to construction equipment exhaust. Because limited construction equipment would be in use during operational activities and the estimated PM_{10} emissions (i.e., DPM equivalent) related to exhaust emissions **(**Table 4.3 8**)** are minimal, health impacts from operational activities would be less than significant.

Decommissioning

At such time as the facility is decommissioned, equipment operation and site restoration activities would 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. However, impacts would be less than those of construction, as no grading would occur. Mitigation implemented during construction would also be implemented during decommissioning. Therefore, as with construction, with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9, any potential health impacts would be reduced compared to those provided in Table 4.3-8.

Carbon Monoxide Hotspot Analysis

Kern County and the SJVACPD have established criteria to determine if a project would potentially result in a CO hotspot. The County's guidance states that a CO hotspot analysis using the CALINE4 model would be required for the following project conditions:

- LOS of an intersection or roadway is identified as LOS E or worse.
- Signalization and/or channelization is added to an intersection.

- Sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or signalization.

The project would have trip generation associated with construction worker vehicles and vendor trucks. As construction is only expected to last 32 months, it would be considered temporary and would not result in a long-term source of CO emissions. Also, the project would create minimal emission sources during operation. As identified in the project's Traffic Study, the impacted intersections and roadways segments will operate at a LOS of C or better. Therefore, the project would not cause the LOS of any studied intersection or roadway to operate at LOS E or worse during construction or operation or require adding signalization or channelization to an intersection. As such, a CO hotspot analysis is not required, and the potential project-generated impacts associated with CO hotspots 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 O_3 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.

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 O_3 and its precursors NO_X and ROG and VOC; O_3 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 O_3 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 O_3 is done on a regional scale and it is inappropriate to analyze O_3 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 O_3 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 O_3 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 O_3, 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 B of this EIR.

Ambient Air Quality Standards

The USEPA and CARB have established NAAQS 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. The SJVAPCD where the project is located is designated as an attainment area for O_3 (1- hour), PM_{10} and $PM_{2.5}$ and nonattainment for O_3 (8-hour) under the NAAQS, and nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under the CAAQS.

Project Heath Effects of Criteria Air Pollutants

A sensitive receptor can be hypothetically 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 is the potential for exposure via non-inhalation pathways due to the deposition of particulate pollutants (DPM) in the environment.

An AAQA was performed to determine if the proposed project has the potential to impact local ambient air quality through an exceedance of the ambient air quality standards or a substantial contribution to an existing or projected air quality standard. The AAQA was conducted using AERMOD for the 24-hour and annual averaging periods where the maximum concentration for each source and receptor combination was generated to produce worst-case concentrations for PM_{10} and $PM_{2.5}$ based on an 8-hour per day, 5-day per week construction schedule. The particulates were modeled together, with a normalized (i.e., unit) emission rate of 1 gram per second for the area source. The use of a normalized emission rate enabled the modeling run outputs to be used for multiple pollutant analyses. This procedure is described as follows:

1. For Step 1 of the AAQA analysis, the maximum background concentration for the monitoring stations closest to the project site for each pollutant and averaging period combination was added to the corresponding maximum GLC (project impact). The sum of these values was then compared to the corresponding CAAQS and NAAQS. If the project impact did not cause an exceedance of an AAQS, then the analysis was complete for that source/receptor/pollutant combination because no exceedance of an ambient air quality standard would occur. If the project impact caused an exceedance of an AAQS, then the analysis proceeded to Step 2.
2. Step 2 was similar to a Step 1 with one major difference. If the background concentration plus GLC exceeds an AAQS, including instances where the background concentration alone exceeds an AAQS, the maximum GLC of each pollutant and averaging period combination was compared to its corresponding significant impact level (SIL), where a value exceeding the SIL is considered an indicator that the GLC represents a substantial contribution to an exceedance of an AAQS. If the maximum GLC did not exceed the corresponding SIL, then the analysis was complete for that source/receptor/pollutant combination because the emissions would not be considered to contribute to an exceedance of an AAQS, and no further action was required.

Table 4.3-9, *Unmitigated Construction Ambient Air Quality Impact Assessment Results*, presents a summary of the two-step process taken to determine whether construction activities associated with the project would cause or contribute to ambient air quality impacts, with the detailed AAQA included in Insight's AQIA. (Insight Environmental/Trinity 2021).

TABLE 4.3-9: UNMITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS

STEP 1 – Ambient Air Quality Standard Basis				
		AAQS	**Maximum Concentration: Project + Background Levels**	
Impact Parameter	**Applicable Standard**	**µg/m³**	**µg/m³**	**Exceed AAQS?**
24-hour PM_{10}	State	50	130.69	*Yes (Step 2)*
	Federal	150	130.69	*No*
Annual PM_{10}	State	20	39.32	*Yes (Step 2)*
24-hour $PM_{2.5}$	Federal	35	59.58	*Yes (Step 2)*
Annual $PM_{2.5}$	State	12	11.53	No

TABLE 4.3-9: UNMITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS

Federal	12	11.53	No
STEP 2 – EPA Significant Impact Level (SIL) Basis			
	SILs	**Project Construction**	
Impact Parameter	**µg/m³**	**µg/m³**	**Exceed SIL?**
24-hour PM_{10}	10.4	4.79	*No*
Annual PM_{10}	2.08	0.32	*No*
24-hour $PM_{2.5}$	2.5	0.48	*No*

NOTE: AAQS = Ambient Air Quality Standard; CO = carbon monoxide; NO_2 = nitrogen dioxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; EPA = Environmental Protection Agency; SIL = significant impact level

SOURCE: Insight Environmental/Trinity 2021.

As shown, in Table 4.3-9, unmitigated project would not exceed the applicable SILs. Therefore, impacts to ambient air quality would be less than significant.

Criteria air pollutants missions associated with construction and operation of the proposed project would not exceed the SJVAPCD thresholds. However, regarding health effects of criteria air pollutants, the project's potential to result in regional health effects associated with ROG, NO_X, PM_{10}, 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, PM_{10}, and $PM_{2.5}$ for which the air basin in nonattainment for emissions resulting from project construction and operation 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. While COVID-19 is thought to spread mainly through close contact from person-to-person, the CDC is still learning how the virus spreads and the severity of the illness it causes (CDC, 2020b). COVID-19 research and causality are still in the beginning stages. A recent study found that a small increase in long-term exposure to $PM_{2.5}$ may lead to an increase in the death rate of COVID-19 (Harvard School of Public Health 2020). The study suggests that long-term exposure to $PM_{2.5}$ is associated with higher COVID-19 mortality rates, even after adjustment for a wide range of socioeconomic, demographic, weather, behavioral, epidemic stage, and healthcare-related confounders. Long-term exposure to $PM_{2.5}$ emissions may also add to the potential susceptibility for COVID-19. 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). Onsite 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. $PM_{2.5}$ emissions from diesel emissions during construction and operation of the proposed project, could increase susceptibility to COVID-19.

While construction dust suppression measures would be implemented in Mitigation Measure MM 4.3-1, MM 4.3-2 and MM 4.3-6, exposure to dust during construction could still occur which could increase the health susceptibility and increase the severity of the disease. Therefore, the project would implement Mitigation Measure MM 4.3-12, 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; however, the exact reduction from implementation of these Mitigation Measures cannot be quantified given existing scientific constraints.

Impacts are potentially significant because the project will increase $PM_{2.5}$ emissions. While $PM_{2.5}$ emissions from project implementation would be below SJVAPCD thresholds and will be reduced as much as is feasible with implementation of MM 4.3-1, MM 4.3-2 and MM 4.3-6, this impact cannot be mitigated to a level of less than significant as there is not herd immunity for COVID-19. Thus, impacts remain significant and unavoidable even with all feasible mitigation.

As discussed under the subheading *Pollutants and Effects*, health effects associated with O_3 include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019b). VOCs and NO_x are precursors to O_3, for which the San Joaquin Valley Air Basin is designated as nonattainment with respect to the NAAQS and CAAQS. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the San Joaquin Valley Air Basin due to O_3 precursor emissions tend to be found downwind of the source location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O_3 precursors is speculative. However, even though the project would not exceed the SJVACPD VOC and NO_x thresholds during project construction or operation, the project could contribute to health effects associated with O_3.

Health effects associated with NO_x and NO_2 include lung irritation and enhanced allergic responses (CARB 2019c). Proposed project-related NO_x emissions would not exceed the SJVACPD construction mass daily thresholds. Additionally, because the San Joaquin Valley Air Basin is a designated attainment area for NO_2 (and NO_2 is a constituent of NO_x) and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the proposed project would cause an exceedance of the NAAQS and CAAQS for NO_2 or result in potential health effects associated with NO_2 and NO_x. Therefore, the proposed project is not anticipated to contribute to health effects associated with NO_x and NO_2.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019d). CO tends to be a localized impact associated with congested intersections. The potential for CO hotspots is discussed under the subsequent impact criterion below and determined to be less than significant. Thus, the proposed project's CO emissions would not contribute to significant health effects associated with CO.

While construction dust suppression measures would be implemented in Mitigation Measure MM 4.3-2, exposure to dust during construction could still occur which could increase the health susceptibility and increase the severity of the disease. Therefore, the project would implement MM-AQ-2, 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; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints.

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.

Serpentine 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. However, according to information provided by the Department of Conservation Division of Mines and Geology, the project site is not in an area likely to contain ultramafic rock or naturally occurring asbestos (California Department of Conservation, 2000). Therefore, impacts associated with exposure of construction workers and nearby sensitive receptors to asbestos would be less than significant.

Mitigation Measures

MM 4.3-10: 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 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 ational Institute for Occupational Safety and Health-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 4.3-11: 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 4.3-12: 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

Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 and MM 4.3-10 through MM 4.3-12, 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 would result in significant and unavoidable project-level impacts.

Impact 4.3-4: The project would create objectionable emissions (such as those leading to odors) adversely affecting a substantial number of people?

Odors are a form of air pollution that is most obvious to the general public and can present problems for both the source and surrounding community. Although offensive odors seldom cause physical harm, they can be annoying and cause concern. Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people.

The project is a solar facility and the anticipated activities for the project site are not listed in Table 6 of the GAMAQI as a source that would create objectionable odors, thus the project is not expected to be a source of objectionable odors Therefore, impacts associated with odors would be considered less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Analysis

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and 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.

Kern County's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports requires 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).

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 the project would not exceed Kern County's or the SJVAPCD's criteria air pollutant emission thresholds.

Localized Impacts

A total of 36 projects, including several renewable energy projects, were considered as part of the cumulative project analysis and 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 both O_3 and PM_{10}, 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 projects 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_{10}. 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 energy storage system 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 SJVAPD 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

The most recent, certified SJVAB Emission Inventory data available from the SJVAPCD is based on data gathered for the 2015 annual inventory (see Appendix C). This data will be used to assist the SJVAPCD in demonstrating attainment of Federal 1-hour O_3 Standards (SJVAPCD 2007). Table 4.3-10, *Annual Cumulative Percentage of Project Construction Emissions*, provides a comparative look at the impacts proposed by the proposed project to the SJVAB Emissions Inventory.

TABLE 4.3-10: ANNUAL CUMULATIVE PERCENTAGE OF PROJECT CONSTRUCTION EMISSIONS

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
Kern County[1]	22,484	20,842	33,872	511	13,688	3,833
SJVAB[2]	112,931	96,105	199,509	2,738	95,667	21,681
Proposed Project						
Proposed Project % of Kern County	<0.01	<0.01	<0.01	<0.01	0.02	0.01
Proposed Project % of SJVAB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

NOTES: CO = carbon monoxide; NO_x = oxides of nitrogen; SJVAB = San Joaquin Valley Air Basin; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides; ROG = reactive organic gases
Maximum annual construction were presented.

SOURCE: [1](CARB 2019a) [2](CARB 2019b)

As shown in Table 4.3-10, 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.

Mitigation Measures

Implement MM 4.3-1 through MM 4.3-12.

Level of Significance After Mitigation

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 would result in significant and unavoidable cumulative level impacts.

Cumulative Impacts Summary

The discussion provided above evaluates localized impacts, including projects located within a 1- and 6-mile radius; evaluates consistency with existing air quality plans; and compares project emissions to CARB emission projections for the region, consistent with the criterion provided in Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*.

As discussed in Impact 4.3-2, the construction emissions generated by the project individually would not exceed SJVAPCD thresholds. As shown therein, emissions for NO_x, CO, and PM_{10} during construction of the project are below the SJVAPCD's significance threshold with implementation of Mitigation Measures

MM 4.3-1 through MM 4.3-9. 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 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 emissions generated and the effect on public health and welfare. Therefore, cumulative impacts for criteria pollutants are considered significant and unavoidable.

Mitigation Measures

Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-12 would be required.

Level of Significance after Mitigation

Cumulative impacts would be significant and unavoidable during temporary construction and decommissioning of the project after implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11. Cumulative impacts related to operation would be less than significant. 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 would result in significant and unavoidable cumulative level impacts.

4.4 Biological Resources

4.4.1 Introduction

This section of the EIR describes the affected natural environment and regulatory setting for biological resources either present or with the potential to be present on the project site; the potentially significant impacts on biological resources as a result of implementation of the proposed project, and the criteria used to evaluate the significance of potential impacts; and measures to minimize and mitigate potentially significant impacts. The analysis presented in this section is based on a review of relevant literature, field reconnaissance surveys, and focused biological surveys.

4.4.2 Methods

Literature and Database Review

The following were reviewed for information on special-status biological resources in the project vicinity (Appendix D1):

- California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB)
- CDFW's Special Animals List
- eBird Database
- CDFW's Biogeographic Information and Observation System
- CDFW's California Wildlife Habitat Relationships (CWHR) System
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California
- Calflora
- U.S. Fish and Wildlife Service's (USFWS) Critical Habitat Mapper
- USFWS Information for Planning and Consultation (IPaC) system
- USFWS National Wetlands Inventory
- U.S. Geological Survey (USGS) National Hydrography Dataset
- Federal Emergency Management Agency (FEMA) flood zone maps
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey
- Current and historical aerial imagery
- Topographic maps

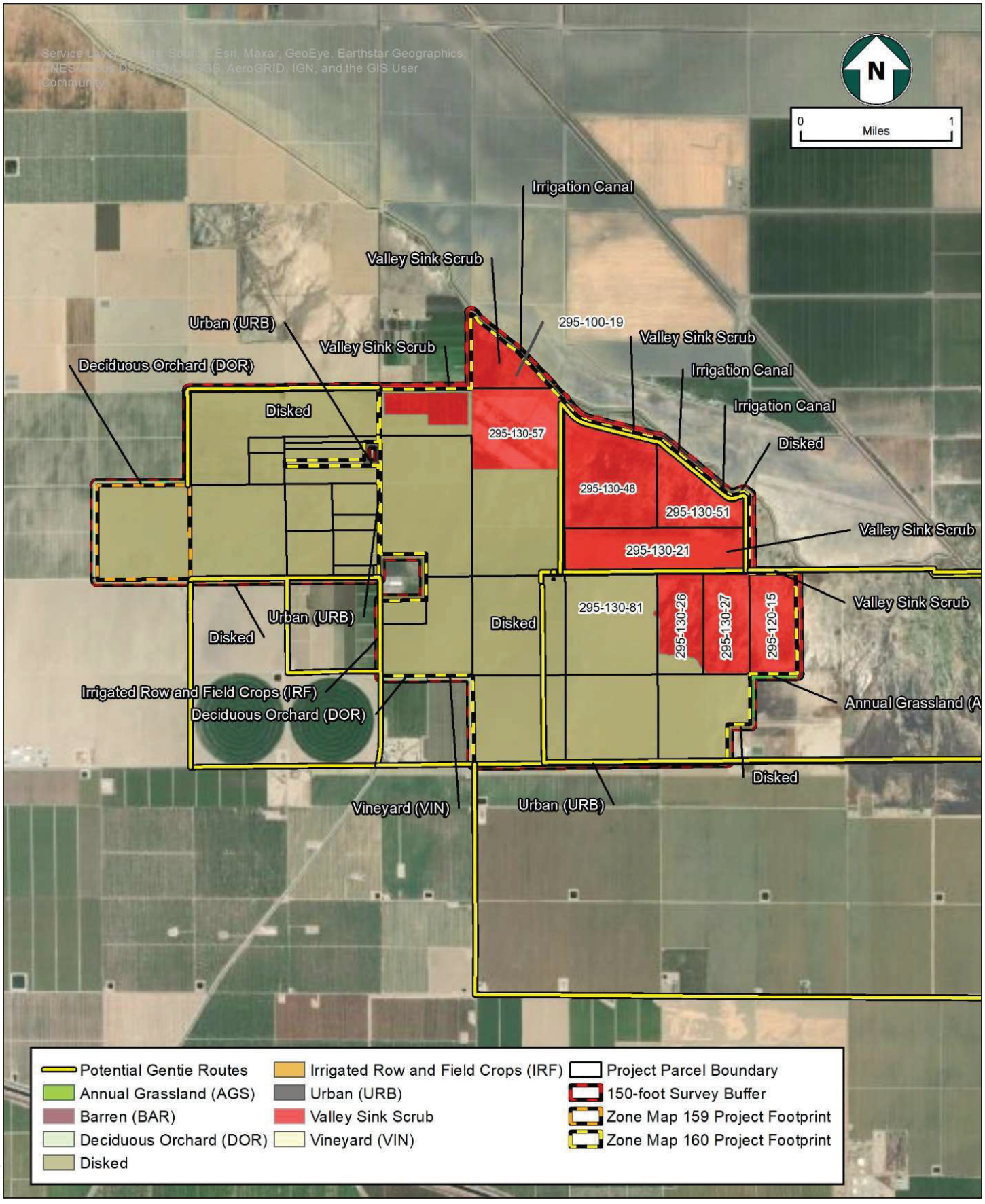
For each of these data sources, the search was focused on the Conner SW, Coal Oil Canyon, Mettler, Weed Patch, and Conner, California USGS 7.5-minute quadrangles in which the project is located, plus the surrounding 13 quadrangles. For the CNDDB, a 10-mile search radius was used. The results of the database inquiries were reviewed to develop a list of special-status resources that may be present within and in the vicinity of the project.

Technical Studies

The analysis presented in this section is also based on the Biological Analysis Report for the Sandrini Solar Project and the Supplemental Sandrini Biological Surveys memorandum. The technical reports are provided in Appendix D1 and Appendix D2, respectively, of this EIR. The reports include a discussion of surveys conducted for biological resources including habitat assessments for special-status wildlife species, focused surveys for rare plants, and a general biological resource assessment for the project site. The property area, methodologies, site conditions, and results of all field surveys are detailed in Appendix D1 and Appendix D2 of this EIR.

2020 Reconnaissance Surveys

Biological surveys conducted for the project by Quad Knopf in 2020 consisted of a larger area than evaluated in this EIR. Particularly, the parcel in Zone Map #203 and the eastern parcel in Zone Map #161 were removed from the project area after surveys were completed as noted in Chapter 3, Project Description. Biological surveys of the broader survey area including the project site and numerous potential gen-tie routes, were conducted on April 15 and 16, 2020, and September 15 through 18, 2020 by QK Environmental Scientists Dave Dayton, Karissa Denney, Shannon Gleason, Eric Madueno, Erica Peña, Laura Schneider, and Sarah Yates (Table 4.4-1, *Reconnaissance Survey Personnel and Timing*). The September surveys were conducted several months after the first because additional parcels had been added to the project in Zone Map #160 that required analysis. Much of the project was in active agricultural cultivation or was recently disked at the time of the surveys. Disked areas and areas under active agricultural production were not walked, but any non-agricultural habitat in the project and potential gen-tie routes was walked. The potential gen-tie routes occurring within active agricultural areas were slowly driven. The parcels in Zone Map #160 (see Figure 4.4-1, *Vegetation Communities/Land Cover Types within Zone Maps #159 and #160*) that consist of higher quality native habitat were examined more intensively by conducting pedestrian surveys.



Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

DUDEK

FIGURE 4.4-1

Vegetation Communities/Land Cover Types within Zone Maps #159 and #160

Kern County Planning and Natural Resources Department
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The 2020 reconnaissance field surveys consisted of meandering pedestrian transects spaced 50 to 100 feet apart in habitat suitable for native plant and wildlife species. Habitat was assessed visually with the aid of binoculars and/or spotting scopes to achieve 100% visual coverage of the project site and a 150-foot buffer surrounding the project site. Some areas of the buffer area were not surveyed on foot due to lack of access to private properties. A non-protocol level survey for potential Swainson's hawk (Buteo swainsoni, SWHA) nesting locations was conducted within 0.5 miles of the project site and gen-tie routes, where feasible and accessible. The 0.5-mile distance aligns with the typical construction activity avoidance distance recommended for active Swainson's hawk nests. This survey was conducted concurrent with the other biological surveys on April 15 and 16, 2020. The survey consisted of driving access roads searching for raptor nests and structures capable of supporting a Swainson's hawk nest (e.g., large trees, electrical transmission towers and other tower structures).All surveys conducted in 2020 by QK were reconnaissance in nature; focused protocol-level surveys for special-status plant and wildlife species were not conducted; however, supplemental focused protocol-level botanical surveys and Swainson's Hawk surveys were conducted by ICF in 2021. The purpose of the surveys was to verify the findings of the database searches, establish baseline environmental conditions for the project, and assess the project's potential to support sensitive biological resources in order to develop an assessment of potential project impacts assuming presence of these resources. General tasks completed during the surveys included generating an inventory of plant and wildlife species observed or identified by diagnostic sign (e.g., scat, tracks, burrows.), characterizing vegetation associations and habitat conditions, assessing the potential for special-status plant and wildlife species to occur on and near the project, and documenting any sensitive biological resources such as bird nests, mammal burrows, and water features. All spatial data were recorded using ESRI Collector for ArcGIS software installed on an iPad.

TABLE 4.4-1: RECONNAISSANCE SURVEY PERSONNEL AND TIMING

Date	Personnel	Time	Weather Conditions
4/15/2020	Dave Dayton, Karissa Denney, Eric Madueno	08:30 – 14:30	sunny, clear 67 – 80 ˚F
4/16/2020	Karissa Denney, Eric Madueno	08:35 – 14:15	sunny, clear 70 – 84 ˚F
9/15/2020	Dave Dayton, Shannon Gleason, Eric Madueno, Erica Peña	10:00 – 14:05	smoky 81 – 90 ˚F
9/16/2020	Dave Dayton, Shannon Gleason, Eric Madueno, Erica Peña	09:35 – 14:00	smoky, breezy 70 – 90 ˚F
9/17/2020	Shannon Gleason, Eric Madueno, Erica Peña, Laura Schneider, Sarah Yates	09:10 – 15:10	partly cloudy, smoky 76 – 90 ˚F
9/18/2020	Dave Dayton, Shannon Gleason, Eric Madueno, Erica Peña	08:45 – 15:25	partly cloudy, smoky 74 – 93 ˚F

Of the 58 total miles of potential gen-tie routes that had been identified for the project prior to the 2020 reconnaissance surveys, all but 3 miles were surveyed either on-foot or from a vehicle. Those portions of the gen-tie routes occurring within the project were examined concurrently with the surveys conducted for the Zone Map areas. Many of the potential gen-tie routes are along existing roadways and utility rights-of-way adjacent to agricultural lands, although some portions of the potential gen-tie route that runs through the northern portion of Zone Map #160 that is in native habitat.

2021 Focused and Protocol Surveys

Biological surveys conducted in 2021 by ICF included burrow surveys and botanical surveys within suitable non-agricultural habitat, and Swainson's hawk nesting surveys within the entire project footprint and a 0.5-mile buffer.

ICF's biologists conducted burrow surveys on February 2-4, March 9-10, and June 29-July 1, 2021. All surveys were led by senior biologist Kara Martinusen and included assistance from biologists Seth Taylor and Anna Jones. The surveyors walked close transects of the survey area searching for burrows of any size. When found, burrows were assessed for their potential to provide habitat for any of the target species (Tipton's kangaroo rat, San Joaquin antelope squirrel, San Joaquin kit fox, burrowing owl, blunt-nose leopard lizard) and were examined for spoor and other sign which could indicate habitation. The burrow's location was then marked within GIS Collector with relevant data. Small burrows of less than 3 inches in diameter, which often occur in groups, were marked with a single map point and the number of burrows related to that map point recorded in the points description. In the case of burrow complexes consisting of many burrows, a polygon was used to describe the overall area of the complex. Large burrows were given their own entry and marked as potential habitat of kit fox and/or burrowing owl.

ICF biologists conducted nesting surveys for Swainson's hawk in the project area and a 0.5-mile buffer surrounding this area where access was available. Survey methods generally followed the Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawks Nesting Surveys in California's Central Valley (survey guidelines). In accordance with the survey guidelines, surveys were conducted between April 2nd and May 29th, 2021. All surveys were conducted by ICF wildlife biologist Stephen Barlow, Mandy Proudman, and Kara Martinusen. Surveys were conducted by vehicle and on foot between 0800 and 1600. Surveys were primarily conducted from a west to east direction. All accessible suitable nesting substrates (trees, lattice power structures, and large shrubs) within the project area and the buffer area were searched for raptor nests. The biologists searched for nest structures and Swainson's hawks by scanning with the naked eye, binoculars, and a spotting scope to look for nest occupancy. When Swainson's hawk territorial behavior was observed (i.e., defensive displays, calling, pair interaction), hawks were followed to the extent possible to identify the location of the nest. The biologists recorded locations of all potential Swainson's hawk nest structures using GPS.

Botanical survey methods followed California Department of Fish and Wildlife protocols for special status plants (Appendix D2). On March 22 and 23, ICF Botanists Robert Preston and Devin Jokerst performed a floristic survey of the portion of the Gen-tie route in natural habitat. ICF reviewed the habitat assessment for the Sandrini Solar Project (Appendix D1), which provides background information about the plant communities present in the study area and the special-status plants known to occur at locations near the study area. The ICF botanists walked meandering transects across the study area, recording every plant taxon observed and identifying them to the taxonomic level necessary to determine rarity and listing status.

Additionally, in 2021 ICF conducted a reconnaissance survey of the remaining 3-mile portion of the gen-tie route on June 30th that had not been previously surveyed in 2020. The survey area was driven and walked and visually scanned for the presence of suitable habitat for special-status wildlife. Binoculars were used to search for suitable nesting habitat for special-status birds and the area was scanned for the presence of burrows that could provide habitat for ground burrowing special-status species.

4.4.3 Environmental Setting

Regional and Local Setting

The project site is located in the Valley Region of Kern County, in the southern portion of the San Joaquin Valley, nestled between hilly and mountainous terrain to the south and to the east. Existing land uses surrounding the project site consist largely of agricultural parcels sparsely occupied by farm or rural residential uses. The project site is located primarily on flat terrain, currently used for agricultural operations and/or designated for agricultural use.

Climate

The project and associated gen-tie routes are in an area with a Mediterranean climate of hot summers and mild, wet winters. Average high temperatures range from 57°F in January to 100°F in July, with daily temperatures exceeding 100°F several days in the summer (Appendix D1). Average low temperatures range from 35°F in December to 64°F in July. Precipitation occurs primarily as rain, most of which falls from December to April, with an average of 5.8 inches of rainfall per year. Precipitation may also occur as a dense fog known as Tule fog during the winter. Rain rarely falls during the summer months. The project's elevation is approximately 315 feet above mean sea level (amsl),

Land Use

The general region surrounding the project site and gen-tie routes is dominated by active and dormant agricultural fields. However, the northern parcels of the project in Zone Map #160, and approximately three miles of the potential gen-tie route in Zone Map #160, are in areas that have not been cultivated in the past few years and are now considered natural habitat. Historical imagery indicates that the land currently used for agricultural purposes has been used as such since at least 1985. There are several residences and agribusinesses located in the vicinity. Interstate 5 (I-5) and Highway 99 bisect the project site with the California Aqueduct occurring to the south and southwest of the site.

Physical Characteristics

Soils

There are at least 22 soil series types within the project site and along the proposed gen-tie routes. The location and characterization of these are described in detail in Appendix D1.

Vegetation Communities/Land Cover Types

The land cover within the project site consists of a combination of non-vegetative or disturbed land cover types as well as terrestrial and aquatic natural vegetation communities. Most of the land within the project site and potential gen-tie routes is zoned for agricultural use and supports a variety of agricultural crops such as carrots (Daucus carota), onions (Allium cepa), legumes (Fabaceae sp.), and corn (Zea mays). At the time of the 2020 and 2021 surveys, most of the land was in active agricultural production, recently harvested, or recently disked. As noted above in Land Use, there were some areas of native habitat (Valley Sink Scrub) and areas that have partially recovered from past disturbances within Zone Map #160.

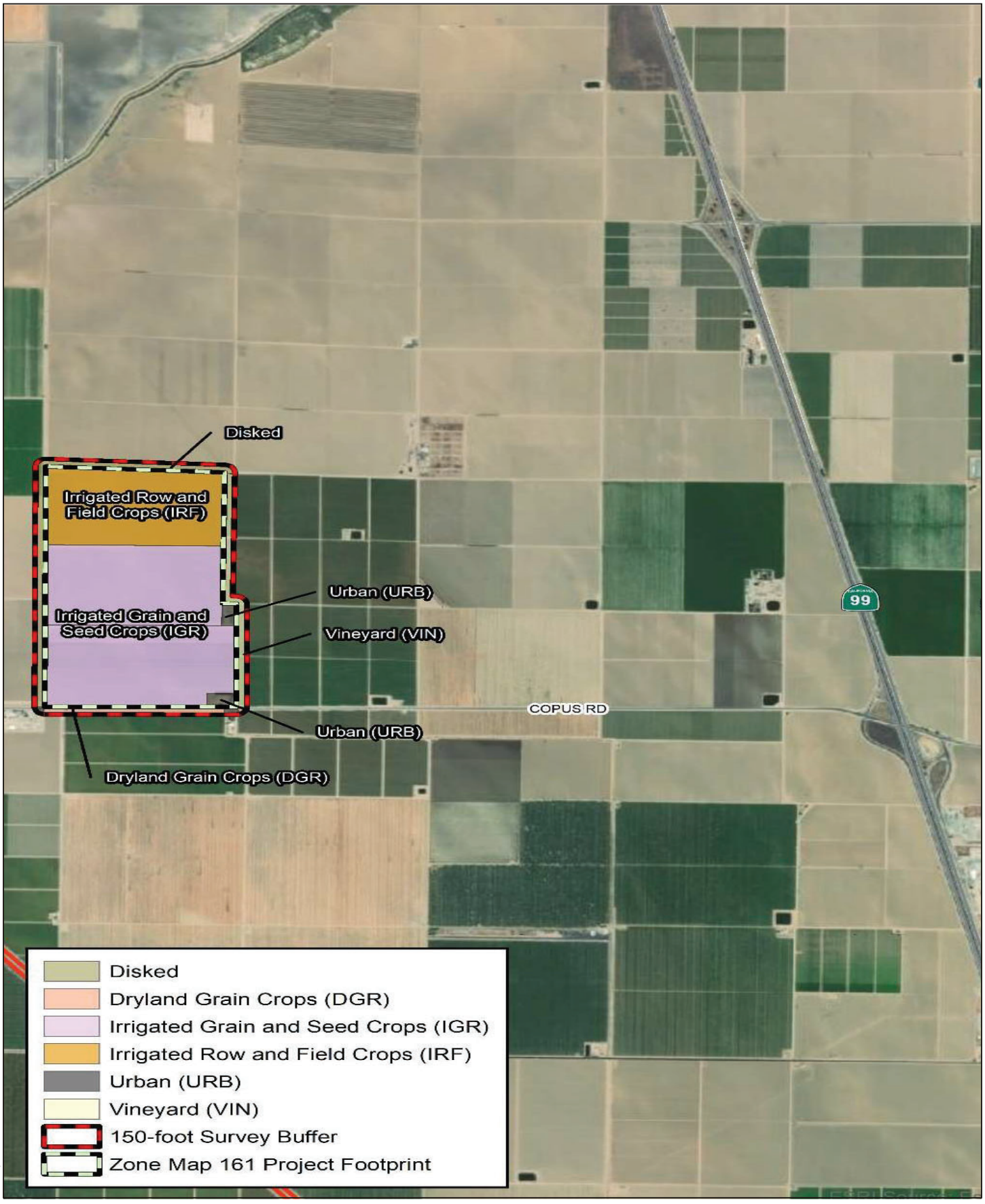
Eleven vegetation communities and land cover types were identified and characterized within the project site (and associated 150-foot buffer) during the 2020 surveys: Annual Grassland, Barren, Disked, Deciduous Orchard, Dryland Grain Crops, Irrigated Grain and Seed Crops, Irrigated Hayfield, Irrigated Row and Field Crops, Urban, Valley Sink Scrub, and Vineyard (Figures 4.4-1, *Vegetation Communities/Land Cover Types within Zone Map #159 and #160* and Figure 4.4-2, *Vegetation Communities/Land Cover Types within Zone Map #161*). These vegetation communities and land cover types are described in the context of A Guide to Wildlife Habitats of California (Appendix D1) and cross-referenced to the CWHR where appropriate. Each of these communities and land cover types are discussed, per each project Zone Map number, in more detail in Appendix D1. Aside from the Valley Sink Scrub habitat and agricultural crops, most vegetation consisted of weedy and ruderal plant species occurring along roadway margins, along canal banks, and in areas that were recently disked. The potential gen-tie routes are underlain by the Barren and Urban land cover types and Valley Sink Scrub vegetation community. The total acreage of each vegetation community and land cover type are listed in Table 4.4-2, *Vegetation Community/Land Cover Type Acreages*. Note that this table also includes a 150-foot survey buffer outside of the project boundary which is a larger area than what is described in Chapter 3, *Project Description*.

TABLE 4.4-2: VEGETATION COMMUNITY/LAND COVER TYPE ACREAGES

Habitat Type	Acreages	
	Primary Survey Area	**150-ft Buffer**
Annual Grassland (AGS)	0.0	8.44
Barren	2.71	19.36
Deciduous Orchard (DOR)	0.0	22.90
Disked	2,574.16	171.96
Dryland Grain Crops (DGR)	0.0	7.41
Irrigated Grain and Seed Crops (IGR)	350.16	11.67
Irrigated Hayfield (IRH)	144.75	11.88
Irrigated Row and Field Crops (IRF)	169.68	16.78
Urban (URB)	4.84	46.83
Valley Sink Scrub	905.21	45.80
Vineyard (VIN)	0.0	56.84
Total	**4,151.51**	**419.87**

Hydrological and Aquatic Features

Several hydrological and aquatic features were identified within and adjacent to the project site through reviews of the USFWS National Wetlands Inventory (NWI) and the USGS National Hydrography Dataset (NHD), many of which were confirmed during the 2020 field surveys and as a result of review of various maps and imagery. These include freshwater ponds, a canal/riverine feature (New Rim Ditch), freshwater emergent wetlands, freshwater forested/shrub wetlands, and a lake feature that did not support water during the 2020 surveys. These features are depicted in Figure 4.4-3, *NWI and NHD Records of Aquatic Resources Mapped within the Project Sites*, and discussed in more detail in Appendix D1. No formal or protocol-level wetland/aquatic delineations were conducted during the 2020 surveys.



Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 4.4-2

Vegetation Communities/Land Cover Types within Zone Map #161

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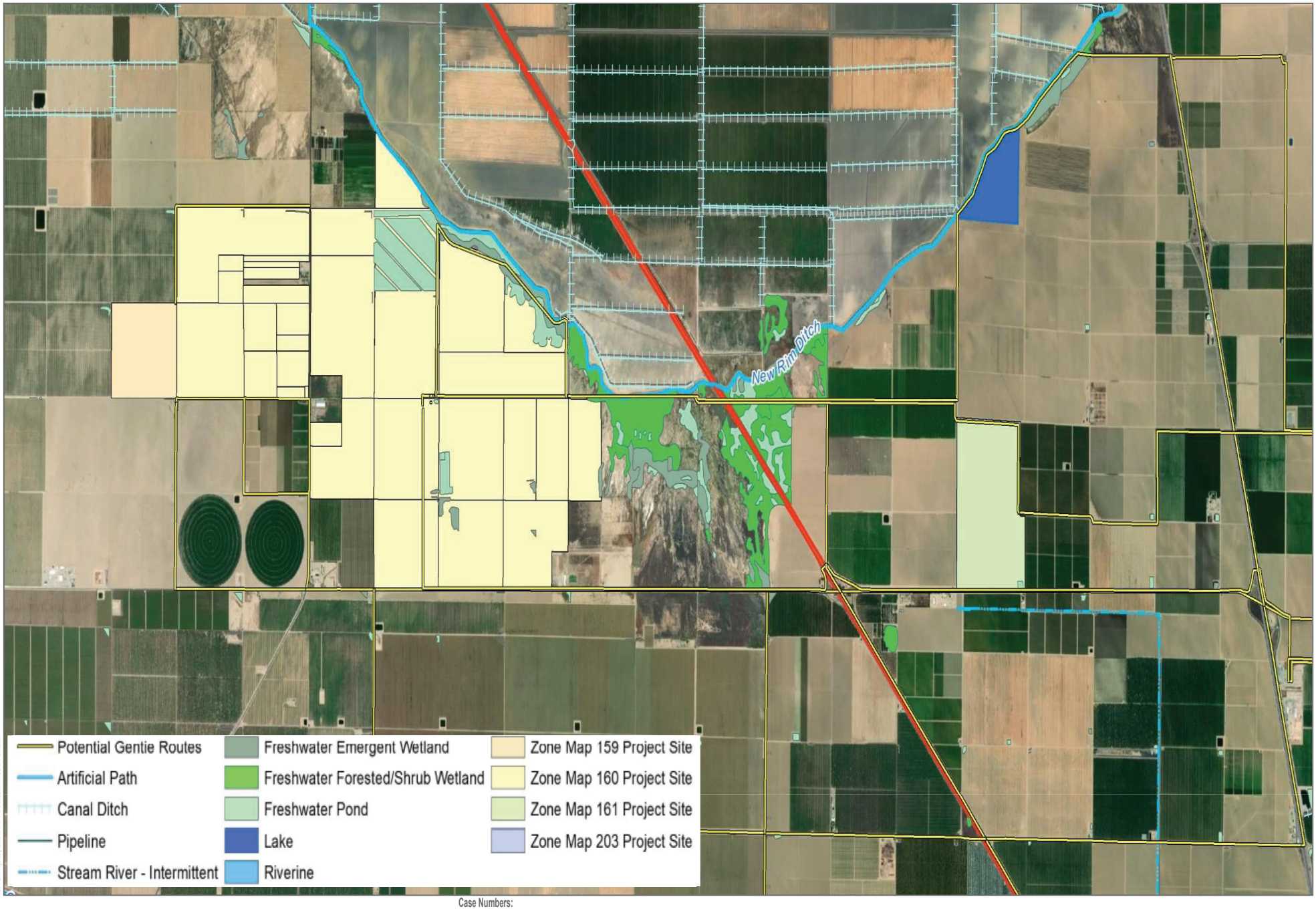

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

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FIGURE 4.4-3

NWI and NHD Records of Aquatic Resources Mapped within the Project Sites

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Plant and Wildlife Species

General Wildlife

During the 2020 surveys, a total of three reptile species, 33 bird species, and four mammal species were observed. Four of these are special-status species: Swainson's hawk (*Buteo swainsoni*), loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), and northern harrier (*Circus hudsonius*) are considered of special-status by state and/or federal resources and are discussed in further detail below. Additionally, dens with the potential to be used by the special-status San Joaquin kit fox (*Vulpes macrotis mutica*) were identified, although no individuals were observed. More common species that were observed and that are typical for California's Central Valley included mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), red-tailed hawk (*Buteo jamaicensis*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), and common side-blotched lizard (*Uta stansburiana*).

Special-Status Resources

This section discusses sensitive biological resources observed within and/or near the proposed project during the 2020 and 2021 field surveys or that could potentially occur on or near the site and, for the purposes of this DEIR, were assumed to be present. These resources include special-status plant and animal species (defined below), vegetation communities considered sensitive by the CDFW, aquatic resources potentially under the jurisdiction of state and/or federal resource agencies, and wildlife movement corridors. Each of these are discussed further below.

A complete list of species evaluated for this project is included in Appendix D1. The potential for each special-status species to occur in the project footprint and along the potential gen-tie routes were evaluated according to the criteria outlined in Section 2.2 in Appendix D1.

Special-Status Plant and Wildlife 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 or State Endangered Species Acts. Other species have been designated as special-status on the basis of adopted policies and expertise of State resource agencies or 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 that are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA).
- Species that meet the definitions of rare or endangered under CEQA Guidelines Section 15380.
- All plants that have a California Rare Plant Rank (CRPR) of 1A, 1B, or 2B and, as such, meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the Fish and Game Code and are considered Rare, Threatened, or Endangered in California.
- Wildlife designated by the CDFW as "species of special concern" or "special animals."

- Wildlife designated as Fully Protected in California (Fish and Game Code Sections 3511, 4700, and 5050).
- Species considered as locally important by Kern County and/or otherwise protected through ordinance or local policy.

It should be noted that most avian species are afforded certain protections by the MBTA and California Fish and Game Code (Sections 3500–3516); however, most of these are common species and are not considered of special status on that basis alone.

As discussed in Section 4.4.2, *Methods*, various agency databases were queried and reviewed to identify special-status biological resources with potential to occur on the site or in the project site region. For those species identified as such, the potential for each species to occur on the project site was based on a review of onsite vegetation communities and available land cover and soil types, known habitat and elevation preferences of these species, and the known geographic range of each species. In addition, the potential for occurrence also incorporated the results of onsite biological surveys conducted on the project site. Species were not expected to occur when the site was clearly outside the known geographic range of the species, or if there was no suitable habitat for the species on and immediately adjacent to the site.

Special-Status Plants

A total of 27 special-status plant species were identified, based on a review of the various literature databases listed in *Literature and Database Review*, as occurring or potentially occurring in the greater project region. Of these, based on an evaluation of the suitability criteria discussed above, it was determined that 9 special-status plant species have some potential to occur within the project footprint and along the potential gen-tie routes. Each of these are listed in Table 4.4-3, *Special-Status Plants with Potential to Occur* and discussed further below.

Table 4.4-3: Special-Status Plants with Potential to Occur

Common Name	Scientific Name	Status (Federal/State/CRPR)
Horn's milk-vetch	*Astragalus hornii var. hornii*	-/-/1B.1
Bakersfield smallscale	*Atriplex tularensis*	-/SE/1A
Lost Hills crownscale	*Atriplex coronata var. vallicola*	-/-/1B.2
heartscale	*Atriplex cordulata var. cordulata*	-/-/1B.2
alkali mariposa lily	*Calochortus striatus*	-/-/1B.2
hispid salty bird's beak	*Chloropyron mole ssp. hispidum*	-/-/1B.1
recurved larkspur	*Delphinium recurvatum*	-/-/1B.2
Kern mallow	*Eremalche parryi ssp. kernensis*	FE/-/1B.2
Comanche Point layia	*Layia leucopappa*	-/-/1B.1

Status Legend:

FE: Federally listed as endangered

SE: State listed as endangered

CRPR 1A: Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere

CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

Project Footprint

The following describes the nine special-status plant species either observed or having potential to occur within the Project Footprint which consists of areas potentially supporting the four proposed solar array facilities within Zone Maps 159-161, and Zone Map 203 (as described in Chapter 3, Project Description, the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project).

Horn's milk-vetch

The Horn's milk-vetch has a CRPR of 1B.1 (Appendix D1). It is an annual herb with widely branched stems between 11 and 47 inches tall. Its leaves are 0.5 to 5.1 inches long and are often reflexed. Its flower petals are white to pale lilac, ovate with spreading hairs. The Horn's milkvetch occurs in meadows, seeps, and playas along lake margins on alkaline soils at elevations from 190 to 2,800 feet. The blooming period of this species is May to October (Appendix D1). The Horn's milk-vetch historically occurred in west-central Nevada and in California in the south San Joaquin Valley, South Coast, western Traverse Ranges, and long the west edge of the Mojave Desert (Appendix D1). It is known from Kern, Inyo, San Bernardino, and Tulare Counties (Appendix D1).

The nearest CNDDB recorded occurrence (EONDX 70408) of Horn's milk-vetch is over a hundred years old and approximately 4.6 miles northwest of the Zone Map #160 project footprint; it has since been extirpated by agricultural development. The only habitat within the project footprint that could support this species is Valley Sink Scrub habitat in Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Heartscale

Heartscale is an annual herb of the Chenopodiaceae family or more commonly known as the goosefoot family. Heartscale has a single stem with branches that have small gray-scaly leaves (Appendix D1). The seeds are red-brown and are approximately 0.05 to 0.07 inches in length. The bloom period is generally between June and July, but local conditions can skew the blooming period to as early as April or as late as October (Appendix D1).

This species has been documented in fourteen counties including Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kern, Madera, Merced, San Joaquin, Solano, Stanislaus, Tulare, and Yolo. It has been documented within numerous U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles within the 14 counties. Heartscale is found at elevations between 0 to 1,837 feet in elevation (Appendix D1). This species is typically found in chenopod scrub, meadows and seeps, valley and foothill grassland (typically sandy soils). The species is found on alkaline or saline soils (Appendix D1).

The only CNDDB recorded occurrence within 10 miles of the project footprint (EONDX 90916) is located approximately 0.7-miles northwest of the Zone Map #160 project footprint. This 1983 occurrence was located north of the New Rim Ditch in Valley Alkali Sink habitat with seepweed and iodine bush; this area has since been converted to agricultural land. The only habitat within the project footprint that could support this species is Valley Sink Scrub habitat in Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Lost Hills Crownscale

Lost Hills crownscale is an annual herb in the Chenopodiaceae family or more commonly known as the goosefoot family (Appendix D1). This species is typically found in chenopod scrub, valley and foothill grassland, and vernal pools in alkaline soil conditions. Lost Hills crownscale is found at elevations between 164 and 2,083 feet. The species has been documented within the following Counties: Fresno, Kings, Kern, Merced, Monterey, San Benito, San Luis Obispo, and Tulare. Within these 8 counties this species has been documented in several U.S. Geological Survey Quadrangles (USGS).

The Lost Hills crownscale spreads out from the base with branches ascending to erect (Appendix D1). The fruit bracts are compressed and approximately 0.09 to 0.15 inches (in) in length and 0.09 to 0.15 in wide. The blooming period is between April and September (Appendix D1). The primary reason for decline of the Lost Hills crownscale is due to grazing, vehicles, alterations of hydrology, and development.

The only CNDDB recorded occurrence within 10 miles of the project footprint (EONDX 76184) for Lost Hills crownscale is located approximately 1 mile north of the Zone Map 160 project footprint. This 1995 occurrence is located is near the intersection of Old River Road and Herring Road. This area has since been converted to agricultural land. The only habitat within the project footprint that could support this species is Valley Sink Scrub habitat in Zone Map #160. Dried remnants of this species were observed during the spring 2021 botanical surveys. The plants were observed in the northern portion of Zone Map 160 within Valley Sink Scrub vegetation primarily along the southern boundary of New Rim Ditch (see Figure 2 in Appendix D2). The plants were mapped in two groups: the western group consisted of about 600 plants, and the eastern group consisted of about 4,600 plants.

Bakersfield Smallscale

The Bakersfield smallscale is listed as State endangered and has a CRPR of 1A (Appendix D1) and is included in the San Joaquin Valley Recovery Plan (Appendix D1). The Bakersfield smallscale is an annual herb, reddish-green or grayish in color, growing up to 31 inches tall. The leaves are up to 1.2 inches long and oval to lance-shaped. Leaves and stem branches are white, scaly, and tough. Both male and female flowers are small, in hard clusters, and occur in leaf axils throughout the plant. The fruits are enclosed in diamond-shaped bracts that are smooth on the surface but toothed on the margin. The Bakersfield smallscale occurs in chenopod scrub habitats at elevations from 290 to 660 feet on alkaline soils and shores of dry lakes (Appendix D1). The Bakersfield smallscale is typically associated with species such as alkali heath (Frankenia salina), glasswort (Salicornia sp.), scratchgrass (Muhlenbergia asperifolia), and saltgrass (Appendix D1). The blooming period of this species is from June to October (Appendix D1). Historically, the Bakersfield smallscale was restricted to a small area of south-central Kern County between Greenfield and Mettler with collection localities near Greenfield, Adobe Station, Adobe Road, and Highway 223 (Appendix D1).

There are only three CNDDB records for this species. The nearest and most recent CNDDB recorded occurrence (EONDX 2743) of Bakersfield smallscale occurred approximately 1.1 miles east of the Zone Map #160 project footprint. This 1992 occurrence is in alkaline soils with native plants just northwest of the intersection of I-5 and Wible Road. This population was monitored beginning in 1983 and steadily declined until 1992, when no individuals were found. There is another occurrence approximately 5.3 miles north of the Zone Map #161 project footprint, which is from 1934 and extirpated due to agricultural development (EONDX 2744). The third occurrence is over 10 miles north of the project footprint and extirpated.

According to CNPS, USFWS, and Calflora, Bakersfield smallscale is presumed extinct throughout California, and the only known extant population is at Gator Pond at the Kern Lake Preserve (Appendix D1). Gator Pond is adjacent to the New Rim Ditch between the Zone Map#160 and Zone Map #161 project footprint, and only about 0.1 mile from the northernmost potential gen-tie route. Because of the project's proximity to this known population, it is possible that the species persists in the project footprint and its vicinity, and the only habitat suitable to support this species is the Valley Sink Scrub habitat in Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Alkali Mariposa Lily

Alkali mariposa lily is a perennial bulbiferous herb with an erect stem 0.4 to 2.0 inches tall. Its flowers have 3 rounded petals which may be slightly toothed. Each petal is 0.8 to 1.2 inches long and varies from light to very dark pink or purplish with darker pink or purple veining or mottling. The cup of the flower is somewhat hairy with anthers bright to dull pink; its pollen is pink. Each flower has pointed sepals around its base (Appendix D1). The alkali mariposa lily occurs in chaparral, chenopod scrub, Mojave Desert scrub, and meadows and seeps in alkaline and mesic soils at elevations between 200 and 5,300 feet. It blooms between April and June (Appendix D1). In California, it occurs in the Sierra Nevada foothills and western Mojave Desert, including Kern, Inyo, Tulare, Los Angeles, and San Bernardino Counties (Appendix D1).

The nearest CNDDB occurrence is from 1989 and approximately 11.2 miles northwest of the project footprint. The population was found in Valley Sink Scrub habitat very similar to the habitat that is present in Zone Map #160 and along the potential gen-tie routes to the east of Zone Map #160. It is possible that this species could occur within the Valley Sink Scrub Habitat within Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Hispid Salty Bird's Beak

The hispid salty bird's beak is an annual hemiparasitic herb with stems branching near its base. The species is grayish or purplish green and coated in long, sometimes bristly and glandular, whitish hairs. Its woolly inflorescence is a spike of club-shaped white flowers enclosed in densely hairy sepals. It occurs in alkaline meadows and seeps, playas, and grassland habitats at elevations to 510 feet. The blooming period of this species is from June to September (Appendix D1). The hispid salty bird's beak is endemic to California and historically known to occur in the Sacramento and San Joaquin Valleys (Appendix D1); however, it has been extirpated from much of the lower San Joaquin Valley (Appendix D1).

The only CNDDB recorded occurrence of hispid salty bird's beak within 10 miles of the project footprint from 2010 and approximately 1 mile west of the Zone Map #160 project footprint (EONDX 17845). The area of this CNDDB occurrence could still potentially support hispid salty bird's beak since the area is within native habitat. The only habitat within the project footprint that could support this species is Valley Sink Scrub habitat in Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Recurved Larkspur

Recurved larkspur is a perennial herb in the Ranunculaceae family or more commonly known as the buttercup family (Appendix D1This species is typically found in chenopod scrub, cismontane woodland,

and valley and foothill grassland habitats on poorly drained, fine, alkaline soils. Recurved larkspur is found at elevations ranging from near sea level to 2,590 feet.

The nearest CNDDB occurrence for the species is from 1987 and is approximately 10.9 miles northwest of the project footprint; this population has been extirpated because the habitat was developed for agricultural use. There is suitable habitat to support this species in the Valley Sink Scrub habitat in Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Kern Mallow

Kern mallow was originally thought to have had a highly restricted distribution, occurring only in western Kern county. Additional populations in Lokern occur intermittently within an area of approximately 40 square miles, being defined primarily by color and the description by Bates (Appendix D1). Pink-flowered plants fitting Bates' broader concept of Kern mallow are known to occur in several areas of Kern county, including Buena Vista Valley, Elk Hills, Lost Hills, McKittrick Hills, Stockdale Highway, and the Temblor Range. They have also been reported in Corcoran in Kings County; the Carrizo Plain, Elkhorn Plain, Panorama Hills, and Temblor Range in San Luis Obispo County; the Cuyama Valley in Santa Barbara County; and the City of Pixley in Tulare County (Appendix D1). It occurs on alkaline sandy to clay soils, usually in saltbush and chenopod scrub, at elevations of 230 to 4,230 feet (Appendix D1). It is included in the San Joaquin Valley Recovery Plan (Appendix D1).

The nearest CNDDB occurrence is from 1986 within the Kern River Preserve near I-5, approximately 1.7 miles east of Zone Map #160 (EONDX 86744). The only habitat within the project footprint that could support this species is Valley Sink Scrub habitat in Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Comanche Point Layia

The Comanche Point layia has a CRPR of 1B.1 (Appendix D1) and is included in the San Joaquin Valley Recovery Plan (Appendix D1). This species is an annual and can grow 3 to 24 inches tall (Appendix D1). This species is glandular and not strongly scented. Its stem is straw-colored, and its leaves are oblanceolate and lobed. Its flowers are white and range between 0.3 and 0.6 inches in length (Appendix D1). The Comanche Point layia occurs in chenopod scrub and valley and foothill grassland habitats at elevations from 300 to 1,200 feet. It blooms between March and April (Appendix D1). The Comanche Point layia is threatened by agriculture, urban development, and grazing (Appendix D1).

Historically, this species occurred in three general areas of the extreme southern San Joaquin Valley and the adjacent hills to the east, including the Comanche and Tejon Hills, the area between Edison and Bena, and the valley floor near the southern end of Kern Lake (Appendix D1). The current distribution of the Comanche Point layia remains in the Comanche and Tejon Hills, but it has not been observed in the Edison-Bena area or on the valley floor since 1935 (Appendix D1). The population of the Comanche Point layia on the Valley floor has likely been eliminated by agricultural development, and its overall population is declining.

The nearest CNDDB record for the species is from 1935 and is within the Zone Map 160 project footprint (EONDX 16919). The only habitat within the project footprint that could support this species is Valley Sink Scrub habitat in Zone Map #160. This species was not observed during protocol botanical surveys conducted within Valley Sink Scrub habitat in spring 2021.

Potential Gen-Tie Routes

There are two areas of potential gen-tie routes that pass-through Valley Sink Scrub Habitat. One of these areas is in the northwest portion of Zone Map #160 and the other is to the north and west of Zone Map #161. These two areas could contain any of the species of special-status plants discussed above. No special-status plant species were observed within the Valley Sink Scrub habitat within Zone Map #160 or Zone Map #161 during the 2020 biological surveys; however, dried remnants of Lost Hills crownscale were observed during the spring 2021 botanical surveys in the northern portion of Zone Map 160 primarily along the southern boundary of New Rim Ditch (see Figure 2 in Appendix D2). Some of these plants may be within or adjacent to the proposed gen-tie route in this area.

Special-Status Wildlife

A total of 53 special-status wildlife species were identified, based on a review of the various literature databases listed in *Literature and Database Review*, as occurring or potentially occurring in the greater project region. Of these, based on an evaluation of the suitability criteria discussed above, it was determined that 18 special-status wildlife species have some potential to occur within the Project Footprint and within land along the potential gen-tie routes. Each of these are listed in Table 4.4-4, *Special-Status Wildlife with Potential to Occur* and discussed further below. All special-status species, nests, burrows, dens, and any other definitive or potential sign of special-status species that were identified during the 2020 surveys are presented in Figure 4.4-4, *Special-Status Resources*, and as identified in Figures 2 through 4 in Appendix D2 during the 2021 surveys.

TABLE 4.4-4: SPECIAL-STATUS WILDLIFE WITH POTENTIAL TO OCCUR

Common Name	Scientific Name	Status (Federal/State/CRPR)
California glossy snake	*Arizona elegans occidentalis*	-/-/SSC
western pond turtle	*Emys marmorata*	-/-/SSC
blunt-nosed leopard lizard	*Gambelia sila*	FE/SE/FP
San Joaquin coachwhip	*Masticophis flagellum ruddocki*	-/-/SSC
tricolored blackbird	*Aqelaius tricolor*	-/ST/SSC
burrowing owl	*Athene cunicularia*	-/-/SSC
Swainson's hawk	*Buteo swainsoni*	-/ST/-
northern harrier	*Circus hudsonius*	-/-/SSC
white-tailed kite	*Elanus leucurus*	-/-/FP
loggerhead shrike	*Lanius ludovicianus*	-/-/SSC
LeConte's thrasher	*Toxostoma lecontei*	-/-/SSC
least Bell's vireo	*Vireo belli pusillus*	FE/SE/-
San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	-/ST/-
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	FE/SE/-
Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	-/-/SSC
Tulare grasshopper mouse	*Onychomys torridus tularensis*	-/-/SSC
American badger	*Taxidea taxus*	-/-/SSC
San Joaquin kit fox	*Vulpes macrotis mutica*	FE/ST/-

TABLE 4.4-4: SPECIAL-STATUS WILDLIFE WITH POTENTIAL TO OCCUR

Common Name	Scientific Name	Status (Federal/State/CRPR)
Status Legend:		
FE: Federally listed as endangered		
FT: Federally listed as threatened		
SE: State listed as endangered		
ST: State listed as threatened		
FP: state Fully Protected		
SSC: State Species of Special Concern		

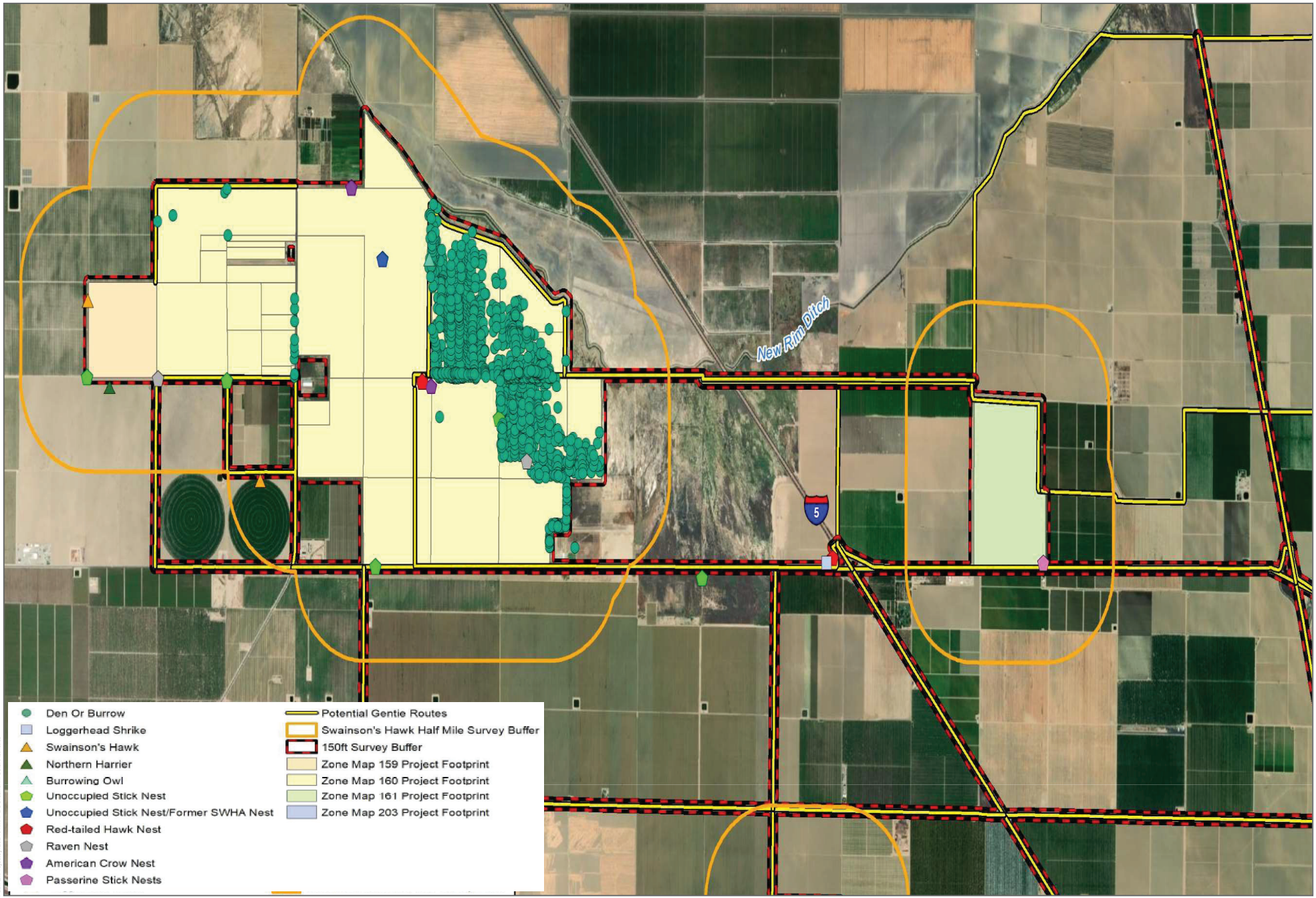
California Glossy Snake

California glossy snake is a non-poisonous, medium-sized muscular snake with smooth, glossy scales and a short tail (Appendix D1). The scales appear to be faded or bleached-out. Colors can vary but are predominately tan or light ground brown with dark brown blotches on the back and sides of the body. Glossy snakes are most common in desert habitats but can be found in chaparral, sagebrush, valley-foothill hardwood, pine-juniper, and annual grasslands (Appendix D1). This species is nocturnal and during the daytime hides in existing burrows, under rocks, or can create its own burrow using its specialized nose (Appendix D1). The California glossy snake is active from late February until November, depending on favorable weather conditions (Appendix D1). This species feeds on lizards, small snakes, terrestrial birds, and small mammals. Breeding season occurs from June to July.

There are several CNDDB recorded occurrences (EONDXs 105230, 105502, 105505, 105465, 104962, and 104961) that were recorded near the Zone Maps #161 and #203 project footprints. These recorded occurrences were documented between 1932 and 1939 and are in locations unlikely to currently support the species because most of the land has been converted to agriculture. The most recent CNDDB recorded occurrence (104963) is located approximately 5.2 miles south of the Zone Map #203 project footprint. As described in Chapter 3, Project Description, the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project. This 1952 recorded occurrence area has been converted for agricultural purposes. No California glossy snakes were observed during the surveys. There is suitable habitat for this species in the Valley Sink Scrub habitat in and around the Zone Map #160 project footprint and potential gen-tie routes.

San Joaquin Coachwhip

San Joaquin coachwhip is a non-poisonous, slender, fast-moving snake with smooth scales and coloring ranging from a tan to pinkish brown (Appendix D1). This species is endemic to California, ranging from Colusa County in the Sacramento Valley southward to the Grapevine in the Kern County portion of the San Joaquin valley and westward into the inner South Coast Ranges (Appendix D1). The San Joaquin coachwhip occurs in open, dry, treeless areas with little or no cover, including valley grassland and saltbush scrub, desert scrub, chaparral, pasture, and open pine and oak woodlands, and avoids areas of dense vegetation where their mobility can be hindered. San Joaquin coachwhips are found below 7,700 feet in elevation (Appendix D1).



Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

DUDEK

FIGURE 4.4-4
Special Status Resources
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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The nearest CNDDB recorded occurrence (EONDX 93889) is from 2010 and located approximately 5.8 miles south of the Zone Map #203 project footprint located on Wind Wolves Preserve Land. The most recent CNDDB recorded occurrence (EONDX 93881) is from 2012 and located 8 miles east of the Zone Map #161 project footprint. As described in Chapter 3, Project Description, the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project. These recorded occurrences are currently within native habitat and may still support this species. No San Joaquin coachwhips were observed during the surveys. There is suitable habitat for this species in the Valley Sink Scrub habitat in and around the Zone Map #160 project footprint and the areas of potential.

Blunt-nosed Leopard Lizard

The blunt-nosed leopard lizard (BNLL; *Gambelia sila*) is a relatively large lizard, reaching lengths of 3-5 inches from snout to vent, not including the tail which can regenerate if lost (Appendix D1). The animal gets its name from the brightly colored markings on the back and tail. The patterns and coloration vary significantly between individuals. During the breeding season, females will display red or orange spots and bars on their sides and under the tail while males have a pink or rust colored underside and body. The bellies are uniformly light or cream colored. Juveniles are distinguished from adults by a larger head relative to the body and an underside of yellow (Appendix D1). These patterns are on top of a yellowish gray to brown skin color. This lizard's body is thicker and larger than other common lizards seen in the Central Valley, such as the common side-blotched lizard and whiptail lizard (*Aspidoscelis tigris munda*).

Suitable BNLL habitat includes areas of grassland and upland scrub that contain requisite habitat elements, such as small mammal burrows. BNLL also use open space patches between suitable habitats, including disturbed sites, unpaved access roadways, and canals. Modern estimates of this reptile's range indicate the species is largely limited to the southern reaches of the San Joaquin Valley. Kern county populations exist near Bakersfield near Poso Creek and down into western Kern county in the areas near Taft and McKittrick. Moving northwards in the San Joaquin valley, blunt nosed leopard lizards have been recorded in the Kettleman Hills Essential Habitat Areas, Ciervo-Panoche Natural Area and Panoche Valley, and other scattered undeveloped or protected lands. This modern range contrasts with what is understood to have been a much wider presence up and down the California's Central Valley prior to significant conversion of habitat.

Western Pond Turtle

As its name suggests, the western pond turtle is found in ponds, lakes, stream, rivers, creeks, marshes, reservoirs, and irrigation ditches…any water body with abundant vegetation and a rocky or muddy bottom (Appendix D1). They require external heat sources to properly regulate their body processes and are often seen basking on the banks of ponds or on partially submerged rocks or logs where they have quick access to water if threatened. They prefer permanent water bodies that have some depth so they can retreat below the water, out of reach of any predators. In springtime, females will leave their aquatic habitat, sometimes travelling hundreds of feet to find a site to lay eggs. Both male and female turtles will leave the protection of a water body for other reasons as well, such as ecological pressures like food scarcity or destruction of habitat (Appendix D1).

There is one CNDDB recorded occurrence (EONDX 28214) within 10 miles of the project footprint. The occurrence is located 1.3 miles northwest of the Zone Map #161 project footprint and does not have an observation date. It should be noted that the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project. According to aerial imagery the area is unlikely to currently support this species since the area has mostly been converted to agricultural land. There are various water features that

occur within and near the project footprint that provide marginal habitat for this species (i.e., irrigation canals, agricultural retention ponds). This aquatic habitat does not support optimal vegetative cover, prey species or basking substrates and there is no suitable upland habitat for breeding or overwintering. This species is unlikely to occur because no permanent aquatic features that could support this species occurs within the project footprint, gen-tie routes, or the buffer areas around these project components.

Least Bell's Vireo

The least Bell's vireo is 1 of 4 subspecies of the Bell's vireo species, a small gray songbird, and is endemic to California. The species is dependent on riparian habitat, preferring dense, low shrubby vegetation associated with early successional growth (Appendix D1). It typically inhabits and forages within structurally diverse woodlands along watercourses, featuring species such as willows (*Salix* sp.), mulefat (*Baccharis salicifolia*), and elderberry (*Sambucus mexicana*), and is also one of the few riparian bird species known to nest in tamarisk (Appendix D1). This species is migratory and breeds from Central California south to Baja California, constructing nests in dense riparian habitat adjacent to flowing or dry waterways. The subspecies has become imperiled due to extensive loss and degradation of native riparian habitat throughout its range.

The nearest CNDDB recorded occurrence is from 1973, 8.9 miles northeast of the Zone Map #161 project footprint (EONDX 93357). There are no eBird occurrences recorded within 10 miles of the project footprint. There is suitable nesting and foraging habitat for the species in the tamarisk scrub in the Zone Map #160 project footprint, south along New Rim Ditch and in the native habitat adjacent to the New Rim Ditch in Zone Map #161 where there is a potential gen-tie route. These areas exist as "islands" of riparian habitat within the agricultural development covering most of the Central Valley, and as such may be attractive to least Bell's vireos. As previously stated, the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project.

Tricolored Blackbird

As of April 2018, the California Fish and Game Commission listed the tricolored blackbird as a Threatened species under the California Endangered Species Act (Appendix D1). Typical physical characteristics include up to 3 colors: the males have a black body with red and white stripes on the wing where the wing attaches to the body. The female doesn't have any color on the wings and has an overall dark brown body (Appendix D1). The tricolored blackbird is a highly social bird that lives, nests, and forages in large numbers (Appendix D1). They can typically be found in cattail or tule marshes and they forage in nearby agriculture fields, pastures, large lawns, or cattle pens. The entire project footprint and potential gen tie routes are considered suitable foraging habitat for the species.

Tricolored blackbirds historically nested in wetlands with cattails (*Typha* sp.), bulrushes (*Scirpus* sp.), or willows (Appendix D1). However, with wetlands being converted to agricultural fields or urban development the species has adapted to nesting in agricultural fields. If there are no wetlands or marshes available tricolored blackbirds have been observed nesting in triticale fields (wheat-rye hybrid). However, the species prefers wetland habitat if available for nesting (Appendix D1).

The nearest and most recent CNDDB recorded occurrence (EONDX 19486) was 0.8 miles northeast of the Zone Map #160 project footprint and 0.9 miles northwest of the Zone Map #161 project footprint. As previously stated, the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project. This occurrence was of tricolored blackbirds that were breeding in a small pond with cattails in

1992, but that pond was dry, and no tricolored blackbirds were present in 2014. There is no wetland or cereal grain habitat in the project footprint or along the potential gen-tie routes, that are suitable for nesting or foraging. The species was not observed during the 2020 or 2021 surveys, and the species is not expected to nest in the area. However, the species may be present as a transient in the vicinity of the project footprint.

Swainson's Hawk

Swainson's hawks occur in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley (Appendix D1). Some hawks may be resident, especially in the southern portion of their range, while others may migrate between winter and breeding habitats. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dry-land grain fields nearby for foraging and have been known to nest in large eucalyptus trees (*Eucalyptus sp.*) along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents. Swainson's hawks exhibit a moderate to high nest site fidelity for successful nest sites.

The CNDDB and eBird data base records from April 2021 shows 13 Swainson's hawk records within 10 miles of the project site. Five Swainson's hawks were observed during the 2020 site visits conducted for the project (Figure 4.4-4, *Special-Status Resources*), 1 Swainson's hawk was present in Zone Map #159 and 4 Swainson's hawks were present northeast of the intersection of Old River Road and SR 166, south and west of Zone Map #160. The sightings of Swainson's hawks occurred early in the nesting season and no nesting Swainson's hawks were observed on or near the project vicinity.

No protocol Swainson's hawk nest surveys were conducted as part of the 2020 site reconnaissance effort; however, protocol surveys were completed in spring 2021. The project footprint is within a migratory pathway used by the Swainson's hawk and these sightings would not necessarily be of nearby nesting Swainson's hawks that were foraging on the site but instead could have been migrating individuals.

There are 5 historic records of active nests within 10 miles of the project footprint. The nearest CNDDB recorded occurrence (EONDX 115312) of a nesting pair is from 2017 and approximately 5.3 miles north of the Zone Map #161 project footprint. This location remains a potential nesting site because the species is known to return to previous nest sites. Four active Swainson's hawk nests were found during the 2021 surveys (see Figure 4, Appendix D2). One nest was located within the applicant proposed conservation area (see Section 4.4.5, *Impacts and Mitigation Measures*) and the other three were located outside of the project footprint, two of which were located within 0.5 miles of the project footprint or potential gen-tie route. During the 2020 reconnaissance surveys, there were 12 unoccupied raptor-sized stick nests within the project footprint and 0.5-mile survey buffer that could potentially be used by nesting Swainson's hawks (Figure 4.4-4, *Special-Status Resources,* and Table 4.4-5, *Stick Nests Observed Within the Project Vicinity*). Some of these nests were located in areas that are no longer part of the project (the Zone Map #203 parcel and the eastern Zone Map #161 parcel). In addition, Swainson's hawks could nest in future nesting seasons in any of the large trees or transmission towers or poles within and surrounding the project footprint. The presence of known nesting Swainson's hawks within 10 miles of the site presents a potential for the site to be used as foraging habitat by nearby nesting Swainson's hawks. The species may forage in any of the Valley Sink Scrub habitat or lands developed for agricultural use within and surrounding the project footprint and along the potential gen-tie routes.

TABLE 4.4-5: STICK NESTS OBSERVED WITHIN THE PROJECT VICINITY

Nest ID	Species Occupying	GPS Coordinates	Location within Survey Area
01	Unknown	35.107679, -118.959299	Zone Map #161; parcel 445-052-32
02	Unknown – Small birds	35.095742, -119.012214	Zone Map #161; parcel 445-062-34
03	Red-tail Hawk	35.095884, -119.039591	Northeast corner of the Copus Road and I-5 intersection
04	Unknown	35.094201, -119.056570	South of Copus Road in SWHA Conservation Easement Area
05	Unknown	35.094710, -119.099074	South of Copus Road in SWHA Conservation Easement Area
06	American crow	35.108593, -119.092004	Zone Map #160; parcel 295-130-71
07	Red-tail Hawk	35.108979, -119.093215	Zone Map #160; parcel 295-130-71
08	Unknown	35.118261, -119.098483	Zone Map #160
09	American crow	35.123678, -119.102569	Zone Map #160
10	Unknown	35.108808, -119.118600	Zone Map #160; parcel 295-130-02
11	Unknown	35.108872, -119.127593	Zone Map #160; parcel 295-130-02
12	Unknown	35.108923, -119.136825	Zone Map #159
13	Unknown	35.068519, -119.046808	Zone Map #203
14	Unknown	35.058591, -119.046849	Zone Map #203
15	Common raven	35.102944, -119.079483	Zone Map #160; parcel 295-130-83
16	Unknown	35.106199, -119.083175	Zone Map #160; parcel 295-130-81

White-tailed Kite

The white-tailed kite is a small- to medium-sized raptor (Appendix D1). Physical characteristics include narrow, pointed wings and a long tail. The underside of the wings is white with black primary feathers with a dark spot on the wrists. The species is a common to uncommon yearlong resident in California. Typically, the species is found in savannahs, open woodlands, marshes, desert grasslands, partially cleared lands, and short crop cultivated fields, primarily dryland grain fields. White-tailed kites typically avoid heavily grazed areas (Appendix D1) and build nests in trees between 16 and 165 feet tall.

White-tailed kites are carnivorous and prey upon voles, small diurnal mammals, birds, insects, reptiles, and amphibians (Appendix D1). White-tailed kite hunt over grasslands, meadows, farmlands, undisturbed areas, and emergent wetlands. While hunting, the white-tailed kite usually soars or hovers, also known as kiting, over an open ground area, approximately 100 feet above ground, and once it has found its prey it dives upon the prey with the claws extended downwards (Appendix D1).

There are no CNDDB recorded occurrences for nesting white-tailed kite within in 10 miles of the project footprint. There is a 1993 eBird record approximately 0.6 miles northeast of the Zone Map #160 project footprint (Appendix D1). The project footprint provides suitable foraging habitat, and the species may nest in large trees within and in the vicinity of the project footprint or potential gen-tie routes.

Burrowing Owl

The western burrowing owl is a broadly distributed, small ground-dwelling owl that can be found throughout western North American, Florida, Central and South America, Hispaniola, Cuba, and northern Lesser Antilles, and the Bahamas (Appendix D1). Typically, this species can be found in a variety of habitat

types including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain (Appendix D1).

Burrowing owls utilize earthen burrows, typically relying on other fossorial mammals to construct their burrows, such as prairie dog (*Cynomys* ssp.) or American badger (Appendix D1). In Florida, burrowing owls are capable of digging their own burrows (Appendix D1). In California, they are associated with California ground squirrels (Appendix D1). They use a burrow throughout the year for temperature regulation, offspring rearing, shelter, and escape from predators. While burrows are most often earthen, they have been documented using atypical burrows such as pipes, culverts, and other man-made structures as burrows, most often as shelter (Appendix D1). Burrowing owls can have several burrows close to one other that they may use frequently to avoid predators.

The nearest CNDDB recorded occurrence (EONDX 82952) was an observed breeding pair. The 2007 occurrence is approximately 0.5 miles north of the Zone Map #160 project footprint. The most recent recorded occurrence (EONDX 105726) was an adult burrowing owl that was flushed from a burrow located in a canal bank. The 2016 occurrence is approximately 1.9 miles southeast of the Zone Map #161 project footprint. Both locations could still be potential denning and foraging habitat for burrowing owl since the species is known to return to previous burrows throughout the year. Two burrowing owls and five potential burrowing owl burrows were observed during the 2020 site visits within and adjacent to the Zone Map #160 project footprint (Figure 4.4-4, *Special-Status Resources*). Based on the current conditions, there is potential for burrowing owls to forage throughout the project footprint, the gen-tie routes, and adjacent areas, and to reside and nest in suitable areas.

Loggerhead Shrike

The loggerhead shrike is a small predatory bird with a large head, gray above with a black facial mask, black hooked bill, and white below with black legs and feet. Females are smaller than males and tend to have browner primaries (Appendix D1). Loggerhead shrikes mainly feed on small to medium-sized reptiles, amphibians, arthropods, and small mammals and birds. They often forage in open landscapes characterized by well-spaced, often spiny, shrubs and low trees, interspersed with short grasses, forbs, and bare ground. Their tomial tooth aids in killing their prey by damaging the spinal cord to induce paralysis. Loggerhead shrikes hunt from perches and impales their prey on sharp objects such as thorns and barbed-wire fences. This impaling behavior probably evolved as a feeding adaptation to enable shrikes to immobilize larger prey than they could otherwise handle.

Loggerhead shrikes can be found all over North America, extending up into Canada during the breeding season and as far south as Central America during the non-breeding season (Appendix D1). Populations that primarily inhabit the northern regions are migratory, moving south from areas that have 10-30 days per year of snow cover. Shrikes who primarily occupy southern regions reside year-round, usually living in pairs on permanent territories. Loggerhead shrikes that occupy southern California are primarily residents and breed between January and July (Appendix D1).

There are no CNDDB recorded occurrences for loggerhead shrike within 10 miles of the project footprint. There is suitable foraging and nesting habitat within and surrounding the Valley Sink Scrub habitat in the Zone Map #160 project footprint. One adult loggerhead shrike was observed north of the potential gen-tie route along Copus Road and I-5 and approximately 1 mile west of Zone Map #161 (Figure 4.4-4, *Special-Status Resources*) during the 2020 site visits. Suitable nesting habitat is present in the Valley Sink Scrub

habitat in the Zone Map #160 project footprint and areas where the potential gen-tie routes pass-through Valley Sink Scrub habitat. This species could be present as a transient forager anywhere on the project site.

Northern Harrier

The northern harrier is a slender, medium-sized raptor with long, fairly broad wings and a long, rounded tail (Appendix D1). It has a flat, owl-like face and a small, sharply hooked bill. Harriers often fly with their wings held in a V-shaped dihedral. There is a visible white rump patch that is obvious in flight. Males are gray above and whitish below with black wingtips, a dark trailing edge to the wing, and a black banded tail. Females and young are brown, with black bands on the tail. Adult females have whitish undersides with brown streaks, whereas the young are buffy in color with less streaking. This species occurs in a variety of habitats throughout California and forages in open wetlands, wet pastures, fallow fields, dry uplands, prairies, agricultural lands, and desert shrub-steppe utilizing open uplands including agricultural lands adjacent to foraging habitat for nesting. Nests on the ground in treeless areas in and adjacent to marshland, dry grasslands, and occasionally cultivated fields.

The northern harrier historically ranges in North America from northern Alaska and Canada south to mid- and lower latitudes of the United States and northern Baja California (Appendix D1). In California, the current range of the northern harrier includes coastal areas, the Central Valley, northeastern California, and the Sierra Nevada region up to 3,600 feet.

There are no CNDDB recorded occurrences for northern harrier within 10 miles of the project footprint. There is marginal nesting habitat within the Valley Sink Scrub in the Zone Map #160 project footprint, and the species may forage throughout the project footprint and gen-tie routes. Two northern harriers were observed during surveys, one south of the Zone Map #159 project footprint and one north of the Zone Map #160 project footprint, over the New Rim Ditch. Both harriers were observed soaring overhead (Figure 4.4-4, *Special-Status Resources*).

LeConte's Thrasher

LeConte's thrasher is an uncommon, year-round resident in southern California deserts and the San Joaquin Valley, preferring sparsely vegetated desert flats, alluvial fans, or gently rolling hills, typically with a high proportion of saltbush or shadscale species or cholla cactus (Appendix D1). Preferred habitat includes shrubs that are usually well scattered with contiguous or closed cover and typically 8 feet or less in height. The species rarely occurs in habitat where creosote is the sole shrub species. This species forages on the ground for insects, arthropods, seeds, small lizards, and other small vertebrates. They typically nest in shrubs or cacti in desert wash habitat. The LeConte's thrasher is not migratory and mates for life (USFWS Appendix D1). Nests are constructed on cholla or within dense, thorny shrubs, most frequently saltbush.

There are no CNDDB records for the species within 10 miles of the project footprint, but there is an eBird record approximately 8.2 miles west of the Zone Map #203 project footprint (Appendix D1). As described in Chapter 3, Project Description, the Zone Map #203 parcel is no longer a part of the project. There is marginally suitable nesting and foraging habitat for the species in the Valley Sink Scrub in the Zone Map #160 project footprint, and it could be present at any time in the vicinity of appropriate habitat.

Tipton kangaroo rat

The Tipton kangaroo rat is one of three subspecies of San Joaquin kangaroo rat, which also includes the Fresno kangaroo rat (*Dipodomys nitratoides exilis*) and short-nosed kangaroo rat (*D. n. brevinasus*)

(Appendix D1). Morphologically, Tipton kangaroo rats are larger than Fresno kangaroo rats and smaller than the short-nosed kangaroo rats. They can be further distinguished by the presence of 4 toes on their hind foot; other kangaroo rat species have 5 toes on the hind foot.

Tipton kangaroo rats inhabit valley saltbush scrub, valley sink scrub, and grassland habitats. Historically, Tipton kangaroo rats were distributed in the southern San Joaquin Valley from the southern margins of the Tulare Lakebed near the towns of Lemoore and Hanford, and on the valley floor in Tulare and Kern Counties (Appendix D1). The subspecies currently only occurs east of the California Aqueduct and the distribution is not continuous, rather it occurs in small, isolated patches often separated by physical barriers such as canals and land developments.

Tipton kangaroo rat population density ranges from 1.5 animals per hectare to 14.5 animals per hectare (Appendix D1). Factors such as weather and location determine the variability in population density. Densities at the higher end were derived from studies at small sites known to be occupied more or less continuously over the years and are likely greater than sites that are temporarily unoccupied or in a population decline (Appendix D1).

Focused trapping efforts were not conducted for this species as part of this BAR. The nearest CNDDB occurrence is from 2017, which documented 2 Tipton kangaroo rats that were trapped and released as part of a monitoring effort (EONDX 112981). This record is 0.7 miles northwest of the Zone Map #160 project footprint, and the species is presumed to be extant at this location and its vicinity. This species may be present in the Valley Sink Scrub habitat present in the Zone Map #160 project footprint, where numerous small mammal burrows, including many kangaroo rat burrows were present. Although Tipton kangaroo rats could be present it is also possible that the kangaroo rat burrows may belong to other species of kangaroo rat such as the Heermann's kangaroo rat (*D. heermanni*) that are known to inhabit the vicinity. Areas of suitable habitat were mapped (Figure 4.4-4, *Special-Status Resources*).

Short-nosed Kangaroo Rat

A current complete range of the species is unknown due to a lack of comprehensive surveys for the species (Appendix D1). However, the few surveys conducted have concluded that there are small, fragmented cluster populations on the edge of the Pleasant Valley, Fresno County; some clusters in Kettleman and Lost Hills, Kings and Kern Counties; the Lokern, Elk Hills, San Emigdio, and Wheler Ridge regions in western Kern County; and the Carrizo Plain Natural Area, and the Caliente Mountains on the northern edge of the Cuyama Valley.

Short-nosed kangaroo rats are typically found on friable soil on flat or gentle rolling terrain in grassland or desert-scrub habitat (Appendix D1). Primary vegetation found in suitable habitat includes Atriplex sp. and Ephedra californica. Burrows are typically found on higher ground to reduce likelihood of seasonal flooding. Higher ground includes berms, canal embankments, railroad begs, bases of shrubs or fences where wind-blown soils have accumulated around the base of the shrub or fence post.

Focused trapping surveys for this species was not conducted as part of the 2020 or 2021 survey effort. The nearest and most recent CNDDB recorded occurrence (EONDX 65268) was identified after it was dropped by a burrowing owl which had preyed upon it. This 2002 occurrence is approximately 5.5 miles northwest of the Zone Map #159 project footprint. Although the project is outside of the range of this species and it is unlikely to occur within the project footprint or along any of the gen-tie routes, it is included in this EIR in order to account for potential movement of the species range in the future. Zone Map #203 is the portion of the project that is closest to the known range of the short-nosed kangaroo rat, which is approximately 1.5

miles to the south, on the southern side of the California Aqueduct. As described in Chapter 3, Project Description, the Zone Map #203 parcel is no longer a part of the project.

San Joaquin Kit Fox

The San Joaquin kit fox (SJKF) is a subspecies of kit fox that is endemic to the Central Valley of California (Appendix D1). Individuals of this subspecies are found primarily in the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central valley. They are only found west of the Sierra Nevada crest. They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. SJKF are well-stablished in some urban areas and are highly adaptable to human-altered landscapes; and while they may occasionally forage in agricultural habitats, they generally avoid intensively maintained agricultural land due to repeated ground disturbance. SJKF use subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be visible above ground near their dens during the day, particularly in the spring. They feed primarily on small mammals, but will consume a variety of prey, and will scavenge for human food.

There are 2 CNDDB recorded occurrences (EONDX 67741 and EONDX 67742) that overlap the project footprint in Zone Maps #160 and #203, observed between 1972 and 1975. As previously stated, the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project. The location of occurrence EONDX 67742 is currently developed for agricultural use. The location of occurrence EONDX 67741 overlaps the Valley Sink Scrub habitat within the Zone Map 160 project footprint. The most recent nearest CNDDB occurrence for the species (EONDX 93494) is from a Tejon Ranch Conservancy survey. This 2012 recorded occurrence is approximately 9.7 miles southeast of the Zone Map #161 project footprint.

Potential SJKF dens were observed during the 2020 reconnaissance surveys, and during the 2021 focused burrow surveys, in the Valley Sink Scrub habitat in the Zone Map #160 project footprint. The species could potentially den in this habitat as well as forage and traverse through the agricultural and urban areas in and around the project footprint and potential gen-tie routes.

San Joaquin Antelope Squirrel

The San Joaquin antelope squirrel (*Ammospermophilus nelsoni*) is a small ground squirrel with small rounded ears, short legs, and a short tail that is often held curled up over its back (Appendix D1). The upperparts are a buffy or tan color with a light stripe along the sides, and the underparts are whitish; superficially resembles a chipmunk.

Populations of San Joaquin antelope squirrels have been documented in Lokern Natural Area and Elk Hills in western Kern County and in the Carrizo and Elkhorn Plains in eastern San Luis Obispo County (Appendix D1). This species is also found throughout the Temblor Range, as well as the foothills and interior valleys of the Diablo Range as far north as Merced and San Benito Counties (Appendix D1). Many of the smaller San Joaquin antelope squirrel populations on the Central Valley floor have disappeared, including those in the Pixley National Wildlife Refuge, Alkali Sink Ecological Reserve in Kerman, Fresno County, Tulare County, and several areas within the Allensworth Ecological Area of Tulare and Kern Counties.

San Joaquin antelope squirrel is primarily found in arid annual grassland and shrubland communities in areas that are rarely subjected to flooding (Appendix D1). The species prefers friable soils that are easy to dig in; common soils types for burrows are loam and sandy-loam soils.

The nearest CNDDB recorded occurrence (EONDX 57243) is located 1.7 miles southwest of the Zone Map #159 project footprint. This occurrence is from 1918 and the area has since been developed for agricultural purposes. The most recent occurrence (EONDX 24158) is approximately 4.2 miles southwest of the Zone Map #159 project footprint. This 1965 occurrence area has been mostly disturbed over the last few decades with the development of the Vulcan Materials Company. This species was not observed during the QK reconnaissance surveys, but there is suitable habitat for this species in the Valley Sink Scrub habitat in and surrounding the Zone Map #160 project footprint and along the portions of potential gen-tie routes that cross through Valley Sink Scrub Habitat to the east of Zone Map #160.

American Badger

The American badger is an uncommon permanent resident at lower elevations throughout California except for the northern North Coast (Appendix D1). They can typically be found in grasslands, deserts, and drier habitats. Badgers are typically nocturnal and hunt or forage at night while spending daylight hours below ground. Normally, they have a single den entrance that is approximately 8 to 12 inches in width, in an elliptical or half-moon shape, similar to their body shape. Dens are usually found in friable soils, which are easier to dig in. American badgers spend most of their time near a den; however, they many have multiple dens in an area that can be used at the same time. American badgers are known to be able to dig a new den each night. During cooler nights the entrance to the den may be partially plugged with soil to help regulate temperatures.

The nearest recorded occurrence (EONDX 57313) was a male American badger that was collected in 1900. This 1900 recorded occurrence is approximately 7.7 miles north of the Zone Map #161 project footprint. As previously stated, the Zone Map #203 parcel and the eastern Zone Map #161 parcel are no longer a part of the project. This area has been developed into what is now Metropolitan Bakersfield, California. The most recent recorded occurrence (EONDX 93545) was a camera station observation during a Tejon Ranch Conservancy survey. This 2012 recorded occurrence is approximately 8.3 miles east of the Zone Map #161 project footprint. This site has not been developed and remains suitable habitat for this species. Individuals or sign of this species was not observed during the 2020 site visits. There is suitable denning and foraging habitat in the agricultural lands and Valley Sink Scrub habitat within and surrounding the project footprint. Because of the frequent disturbance of the active agricultural fields within the project footprint, it is unlikely that American badgers currently den in these areas. However, the species may be a permanent resident in the undeveloped lands within and surrounding the project footprint, and as such may den, forage, or pass through the project footprint at any time.

Tulare Grasshopper Mouse

The Tulare grasshopper mouse inhabits lower elevations in Valley Sink Scrub, Saltbush Scrub, Coast Range Saltbush Scrub, Great Valley Mesquite Scrub, and Valley Grassland Communities. Within these communities the species prefers compact soils with perennial grasses that have a sparse growth. The scrub communities are typically dominated by a variety of plant species including saltbush, alkali golden bush (*Isocoma* sp.), San Joaquin matchweed (*Gutierrezia* sp.), bladderpod (*Peritoma arborea*), California ephedra (*Ephedra californica*), Arabian schismus (*Schismus* sp.), and red brome.

The Tulare grasshopper mouse is nocturnal and is active year-round and probably does not become dormant, at least not for long periods of time (Appendix D1). Tulare grasshopper mice prey upon a variety of crickets, caterpillars, spiders, lizards, frogs, mites, scorpions, and occasionally ants (Appendix D1) On average the Tulare grasshopper mouse has a home range of 7.8 acres for males and 5.9 acres for females (Appendix D1). Specific information on the mating system of the species is unknown; however, based on

other subspecies most litters are born between May to July. The average gestation period is between 27 to 32 days. A female will have 2 to 6 young per litter with an average of 3 litters a year. The male and female will both care for the young. Other small mammals associated with this species' habitat are kangaroo rats, antelope squirrels, ground squirrels, pocket mice, and other mice.

Only one recorded CNDDB occurrence is within 10 miles of the project footprint (EONDX 58567), approximately 1.7 miles southwest of the Zone Map #159 project footprint. The habitat of this 1918 occurrence has been converted to agriculture lands. Numerous small mammal burrows suitable for this species were observed in the native habitat within and surrounding the project footprint, particularly in the Valley Sink Scrub habitat within and around the Zone Map #160 project footprint (Figure 4.4-4, *Special-Status Resources*), and the species may be present in these areas.

Nesting Birds

Habitat within the project footprint and surrounding 150-foot survey buffer area supports nesting native bird species, which are protected by the federal MBTA and the California Fish and Game Code. The initial biological survey that was performed in April 2020 was conducted during the nesting bird season (generally March through August), but the second set of surveys was conducted primarily outside of these dates. Numerous bird species were observed during both offsets of surveys indicating that there is a high potential for migratory birds and raptors to nest in the vicinity of the project footprint. Various species of migratory birds will construct nests in a variety of habitats and structures, and nests may be found in trees or shrubs, in man-made structures, and directly on the ground. There are large trees and electrical infrastructure within and around the project footprint that can support larger nests of raptors and larger bird species such as common raven. Shrubs and man-made structures may support various native nesting bird species such as house finch (*Haemorhous mexicanus*) and mourning dove. Disked fields provide marginal nesting habitat but may still be utilized by ground-nesting native bird species such as mourning doves and killdeer (*Charadrius vociferous*). Fields that are actively maintained for agricultural use are less appealing for most nesting bird species, but some species will still nest in these areas, including horned lark (*Eremophila alpestris*) and mourning dove. Because the project footprint supports several types of habitat suitable for nesting birds, it is likely that birds will nest within the project footprint and along the potential gen-tie routes.

Seventeen stick nests were observed within the project footprint and surrounding survey buffer during the 2020 surveys (Table 4.4-5, *Stick Nests Observed Within the Project Vicinity*) and, as discussed above, during the 2021 surveys four nesting Swainson's hawk were identified north and northeast of the Zone Map #160 project footprint and gen-tie route. Six of the 17 stick nests observed in 2020 were currently occupied (Figure 4.4-4, *Special-Status Resources*). Most of the nests were on power poles or trees that are located on the perimeter of the project footprint.

Sensitive Natural Communities

Plant Communities

Sensitive plant communities (alliances and their associations) are defined by CDFW using Holland types (Sawyer, et. al. 2009). Ranking of alliances according to their degree of imperilment (as measured by rarity, trends, and threats) follows NatureServe's Heritage Methodology, in which all alliances are listed with a G (global) and S (state) rank. For alliances with State ranks of S1-S3 (S1: critically imperiled; S2: imperiled;

S3: vulnerable) as identified in the List of Vegetation Alliances and Associations (CDFG 2010) and subsequent updates, all associations within them are also considered to be highly imperiled.

Three sensitive plant communities were identified as occurring within 10 miles of the project footprint (Appendix D1): Great Valley Mesquite Scrub, Valley Saltbush Scrub, and Valley Sink Scrub. The nearest CNDDB occurrence (EONDX 28800) for Great Valley Mesquite Scrub is approximately 5 miles northwest of the Zone Map #160 project footprint. The nearest CNDDB occurrence (EONDX 16324) for Valley Saltbush Scrub is approximately 4.1 miles north of the Zone Map #161 project footprint. The nearest CNDDB occurrence (EONDX 9789) for Valley Sink Scrub is approximately 1.1 miles west of the Zone Map #161 project footprint and 0.7 miles east of the Zone Map #160 project footprint. Great Valley Mesquite Scrub and Valley Saltbush Scrub do not occur within the project footprint or along the potential gen-tie routes. Valley Sink Scrub occurs within the Zone Map #160 project footprint.

Valley Sink Scrub

Status: California State Rank S1.1

This community consists of low, open to dense succulent shrublands dominated by alkali tolerant species of family Chenopodiaceae, especially iodine bush or seepweed (*Suaeda* sp.) species. Understories are usually lacking, though sparse herbaceous cover dominated by Bromus rubens develop occasionally. This habitat type is associated with saline or alkaline clays, often consisting of heavy, saline and/or alkaline clays of lakebeds or playas with *Allenrolfia*, saltgrass, *Lasthenia*, etc.

This sensitive plant community was observed during surveys in the northeastern portion of Zone Map #160 (Figure 4.4-1, *Vegetation Communities/Land Cover Types within Zone Maps #159 and #160*). Characteristic species such as iodine bush, seepweed, and saltgrass were present, and the soil was powdery, very light in coloration, and retained a hardened crust, typical of alkaline and saline soils in the Central Valley of California. This location overlaps with the historic Kern Lakebed, which dried after diversions of the Kern River starting in the late 18th century. The CNDDB contains a record of this sensitive plant community located between the Zone Map #160 and Zone Map #161 project footprints (EONDX 9789). There are approximately 905 acres of Valley Sink Scrub habitat occurring in Zone Map #160 that provides suitable habitat for several of the rare plant and wildlife species that are described above.

Aquatic Resources

As previously noted, a formal delineation of waters of the U.S. and waters of the State was not conducted during the 2020 field surveys. Field verification was focused on addressing the presence of features resulting from the NHD and NWI database queries, and any additional water features that might be present in the project footprint or in its vicinity. The search of the NHD and NWI databases showed no jurisdictional waterways or permanent bodies of water within the project footprint or the potential gen-tie routes with the possible exception of the northern area in Zone Map #160. Four of the six surveys were conducted during the dry season and during drought conditions when field verifying potentially jurisdictional aquatic resources would not be reliable. As such, a formal field delineation of waters of the State and waters of the U.S. would determine whether permits would be required from the U.S. Army Corps of Engineers, Regional Water Quality Control Board, or California Department of Fish and Wildlife for development within this area. A detailed description of the hydrological features in each zone map can be found in Appendix D1.

Wildlife Movement Corridors

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support animals with very large home ranges (e.g., coyotes, mule deer [*Odocoileus hemionus californicus*]). They can also be small scale movement corridors, such as riparian zones, that provide connectivity and cover to support movement at a local scale.

The project footprint is situated within the Pacific Flyway, which is a significant avian migration route that covers a wide swath of land along the western Americas from Patagonia to Alaska. There are 2 identified movement corridors within 5 miles of the project footprint, the South End San Joaquin Valley and the Southern Sierra (Figure 5-6, *Movement Corridors and Linkages,* in Appendix D1). These corridors are used by a variety of species including SJKF, BNLL, short-nosed kangaroo rat, LeConte's thrasher, deer, black bear (*Ursus americanus*), pronghorn (*Antilocapra americana*) and mountain lion (*Puma concolor*).

4.4.4 Regulatory Setting

The following are those federal, state, and local regulations that are applicable to the natural resources occurring or potentially occurring on the project site or along the proposed gen-tie routes.

Federal

Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration, and National Marine Fisheries Service. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. Under provisions of Section 9(a)(1)(B) of FESA, it is unlawful to "take" any listed species. "Take" is defined in Section 3(19) of FESA as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Projects that would result in "take" of any federally-listed threatened or endangered species are required to obtain authorization from NMFS and/or USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of ESA, depending on whether the federal government is involved in permitting or funding the project.

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 through 711)

The Migratory Bird Treaty Act (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" (U.S. Code 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.

In December 2017, a Department of Interior Solicitor issued a memorandum (M-37050) that interprets the MBTA to only prohibit intentional take. Recent guidance issued by the USFWS in April of 2018 clarifies and reiterates that the MBTA does not regulate "incidental" take, which is take that results from an activity "but is not the purpose of the activity" and that activities lacking the express purpose of killing or injuring migratory birds do not constitute prohibited takings under the MBTA (USFWS 2018). The new administration is intending to reverse this definition to that prior to the 2017 memorandum; however, this revision has not yet been promulgated as a final decision.

Bald and Golden Eagle Protection Act of 1940 (USC, Title 16, Section 668, enacted by 54 Stat. 250)

The Bald and Golden Eagle Protection Act (BGEPA) 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 [FR], volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act

The federal Clean Water Act (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 (USEPA) 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

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.), which prohibits the "take" of plant and animal species designated by the Fish and Game Commission as endangered or threatened in the State of California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, 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 determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (Fish and Game Code, Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)." 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 CWA Section 404 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 may require 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 Clean Water Act. 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 through 1616. Under these sections, 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 3503, 3503.5, 3513, and 3800. Under these sections, 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 California Fish and Game Code 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 through 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

CEQA requires identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guidelines Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15000 et seq.). A rare animal or plant is defined in Section 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

Native Plant Protection Act

The Native Plant Protection Act of 1977 (CFGC Section 1900–1913) directed CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare," and to protect endangered and rare plants from take. When CESA was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of "threatened" and "endangered" species to parallel FESA. CESA categorized all rare animals as threatened species under CESA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and project proponents.

Regional

Kern County Draft Valley Floor Habitat Conservation Plan

The project site is within the management area of the Draft Kern County Valley Floor Habitat Conservation Plan (KCVFHCP). The Draft Kern County Valley Floor Habitat Conservation Plan area occurs in the western portion of Kern County except for areas at the base of the Tehachapi Mountains. The area is limited to the southern San Joaquin Valley floor of Kern County including the project site.

The KCVFHCP is a pending Habitat Conservation Plan pursuant to the FESA covering over 3,110 square miles in Kern County with a purpose of creating a comprehensive strategy to conserve and protect the San Joaquin kit fox, blunt-nosed leopard lizard, and 23 other sensitive species. In addition, this HCP provides a streamlined program for complying with the requirements of the CESA and FESA. The HCP has not yet been approved by the USFWS, CDFW, or the Kern County Board of Supervisors.

If and when completed, incidental take permits for 13 covered species would be issued to participating local jurisdictions and state agencies. This incidental take authorization cannot be implemented, however, until the local governments complete the application for incidental take permits and receive approval from state and federal wildlife agencies

Local

Kern County General Plan

The Kern County General Plan identifies the federal, state, and local statutes, ordinances, and 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 following goals, policies, and measures from the Land Use, Open Space, and Conservation Element and the Energy Element of the Kern County General Plan are applicable to the natural resources occurring or potentially occurring on the project site or along the proposed gen-tie routes.

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

Policies

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 or federally protected plant and wildlife species.

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.

5.4.5: Solar Energy Development

Policy

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 or federally protected plant and wildlife species.

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.

4.4.5 Impacts and Mitigation Measures

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, 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.

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 biological resources.

A project would have a significant adverse effect on biological resources if it would:

a. have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or the USFWS;

b. have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or the USFWS;

c. have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d. interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

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.

The significance of impacts to biological resources was assessed by comparing the potential changes resulting from the proposed project to these significance thresholds. An evaluation of whether or not an effect on biological resources would be "substantial" with respect to the significance thresholds generally considers the following:

- amount and/or extent of the resource (numbers, acres, etc.) to be affected versus preserved;
- the relative biological value (rarity, functions and values) and/or sensitivity status of the resource and its relevance within a specified geographical area;
- the type and severity of impact, (i.e., would the project adversely affect wildlife through mortality, injury, displacement, or habitat loss or adversely impact vegetation through destruction of a sensitive plant population?);
- timing of the impact, (i.e., would the impact occur at a critical time in the life cycle of a special-status plant or animal, such as breeding, nesting, or flowering periods?);
- duration of the impact, (i.e., whether the impact is temporary or permanent).

Direct impacts include those that occur immediately as a result of the proposed project on a particular biological resource. Indirect impacts include those that are caused by the proposed project later in time, but that are still reasonably certain to occur.

Applicant Proposed Conservation Area

In an effort to further reduce or offset impacts to the sensitive Valley Sink Scrub habitat and plant and wildlife species that may rely on that habitat, the applicant will preserve any undeveloped portions of Valley Sink Scrub habitat on site during the life of the project (at least 35 years). This area may still be used for approximately 1.4 miles of gen-tie line for the project including a temporary access area approximately 30-feet wide (for a total disturbed area of approximately 5 acres). The total current Valley Sink Scrub acreage within the project footprint consists of approximately 905 acres; however to accommodate the approximately 5 acres needed for access along the gen-tie line, it is assumed that approximately 900acres would be preserved. Additionally, approximately 97 acres of agricultural habitat of the Zone Map #160 project footprint would be preserved for a total of approximately 997 acres of habitat that will not be developed. All 997 acres would serve as foraging habitat for several special-status wildlife species such as Swainson's hawk and San Joaquin kit fox and would help to offset impacts to approximately 2,473 acres of agricultural foraging habitat from the remainder of the project. The property would be preserved through appropriate legal protection such as a deed restriction or similar restrictive covenant that would ensure the land remain undeveloped while the project is operational. The location of the conservation area is depicted in Figure 3-3, *Aerial Photograph*, and Figure 4-4 of Appendix D1.

Project Impacts

Pursuant to the CEQA significance thresholds listed above, the following describes the potentially significant impacts on biological resources that could occur with implementation of the proposed project, measures proposed to avoid, minimize, and/or mitigate these impacts, and the significance of the impacts with implementation of these measures.

Impact 4.4-1: The proposed project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

The project has the potential to impact special-status plants and wildlife through the loss of habitat, as well as direct and indirect impacts on species such as mortality of individuals or interference with reproductive success. Potential impacts to special-status plants and wildlife from construction, operation and maintenance, and decommissioning are discussed below.

Special-Status Plants

There is potential for 9 special-status plant species to occur within the Valley Sink Scrub habitat within the Zone Map #160 project footprint and potential gen-tie routes occurring in that area. These include the following: Horn's milk vetch, heartscale, Lost Hills crownscale, Bakersfield smallscale, alkali mariposa lily, hispid salty bird's beak, recurved larkspur, Kern mallow, and Comanche Point layia. Special-status plant species are not expected to occur in other areas of the site due to the lack of suitable habitat in these areas. Construction and ground disturbance associated with clearing and grading for power pole locations within Valley Sink Scrub habitat in Zone Map #160 could result in the direct loss of individual plants or populations of special-status plant species should they occur within this habitat at the time of ground disturbance. Indirect impacts can include dust accumulation on individual plants not directly impacted by ground disturbance which can disrupt overall plant vitality.

A total of 25 plant species were observed during the March 2021 botanical survey, and 13 were observed incidentally during other survey efforts for a total of 38 plant species, including 25 native species and 13 introduced species that have been observed in the study area (Table 1 in Appendix D2). Species observed during the 2021 survey were mostly perennial trees and shrubs or dried remains of annual plants from the 2020 growing season. A few grass and forb seedlings were observed at scattered, sheltered locations.

Lost Hills crownscale (*Atriplex coronata* var. *vallicola*), was observed in the western half of the study area (Figure 2 in Appendix D2). Lost Hills crownscale is not state- or federally listed but it has a California Rare Plant Rank of 1B.2, indicating that it is moderately threatened in California. Only dried remnants of this species were observed during the spring 2021 survey; no seedlings were observed. However, the remnants retained sufficient leaves and fruits to confirm their identity. The plants were mapped in two groups. The western group consisted of about 600 plants, and the eastern group consisted of about 4,600 plants. Habitat for Lost Hills crownscale in the study area consists of Chenopod scrub dominated by iodine bush (*Allenrolfea occidentalis*) and bush seepweed (*Suaeda nigra*). Most of this area had been previously disturbed by disking and by a dirt road.

Rainfall totals in the vicinity of the study area during the 2020–2021 winter rainy season were well below normal (Appendix D2). The low rainfall appears to have affected plant growth, as almost no herbaceous forbs and grasses were observed. Therefore, the results of this survey are limited to positive findings, and no conclusions can be drawn about plant species that were not observed.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, would be considered potentially significant.

Mitigation Measures

MM 4.4-1: If special-status plant species are found during floristic surveys or have been previously identified, then Ecologically Sensitive Area (ESA) fencing should be established at a 50-foot radius around these individuals to ensure that they are not destroyed during project construction activities. Pursuant to Section 1913(c) of the California Fish and Game Code, if project activities cannot avoid direct impacts to special-status plants, CDFW shall be notified and provided the opportunity to salvage any of these plants that would be affected. The CDFW may enter into agreement with the project proponent to retain a qualified entity for the relocation of sensitive plants to an approved location. Any salvage would be undertaken in accordance with a salvage plan to be developed in consultation with CDFW. The plan would include methods for transplanting and watering (if appropriate), success criteria for salvaged plants, monitoring the health and survivorship of salvaged plants during at least 5 years following salvage, and contingency measures if plant survivorship requirements are not satisfied.

MM 4.4-2: Invasive species have the potential to out-compete native special-status plant species. Consequently, the introduction and spread of invasive and non-native plant species should be avoided and controlled wherever possible during construction and operations within the project footprint. This may be achieved through the following measures:

- Clean vehicles and equipment before they enter construction areas.

- Apply chemical deterrents or implementing appropriate revegetation actions to disturbed areas to prevent growth of invasive species.
- Implement an annual weed and invasive species control program within the project footprint and areas temporarily impacted during construction.

MM 4.4-3: To reduce any indirect impacts to special-status plants that may be in the project footprint, best management practices (BMPs) will be implemented to control dust pollution, prevent discharge of potentially harmful chemicals, and prevent changes in hydrology. BMPs may include the installation of erosion and sedimentation control devices, applying water to control dust, placing drip pans under equipment when not in use, refueling in designated areas, and containing concrete washout properly, among other practices.

Level of Significance After Mitigation

Impacts would be less than significant.

Special-Status Wildlife

This impact analysis conservatively assumes that approximately 3,470 acres of foraging habitat for certain species, as identified below, could be lost for the duration of project operation. However, implementation of the applicant proposed conservation area outlined above would reduce loss of foraging habitat within the project footprint by 997 acres, of which 900 acres are Valley Sink Scrub and 97 acres are agricultural foraging habitat. For other species, the project will not have a significant impact on – and may have a potential to result in a net benefit to – foraging habitat as a result of agricultural activities within the project footprint being discontinued during project operation. Furthermore, absent negative protocol-level presence-absence surveys, most species have been assumed to be present in suitable habitat. As such, impact analyses reflect the assumption of presence and mitigation has been designed to avoid impacts or require permits from wildlife resource agencies if take cannot be avoided.

Because many of the special-status species evaluated below (e.g. blunt-nosed leopard lizard, kangaroo rat, San Joaquin kit fox, and San Joaquin antelope squirrel) rely on small mammal burrows for important life functions, a comprehensive burrow survey was completed in 2021 within areas of native habitat along the potential gen-tie route in Zone Map #160. The survey area for the three burrow surveys conducted within the gen-tie area is provided in Figure 3 of Appendix D2. Most of the surveyed area in proximity to the New Rim Ditch had very few burrows and had vegetation too thick to provide good habitat for the target species. There were several areas near Interstate 5 where the vegetation was too thick for pedestrian access. This thick vegetation (scrub brush) precludes habitation by any of the state- and/or federally-listed species and limits the ability for many species to effectively burrow. The soil conditions in most of the surveyed area also precludes burrowing activities with soil largely being too frangible and soft to support large burrows and burrow complexes. Large portions of the of transmission line route near the New Rim Ditch appear to flood semi-regularly and soil in these areas are highly alkaline. The alkaline areas are not present across the entire transmission line route and appear as patches within the route and are more prevalent in the northwest portion of the route. No burrows were found in these highly alkaline areas.

The only part of the transmission line survey area that had adequate soil and vegetation conditions to allow for significant amounts of burrowing activity was located along the western portion of the alignment (Figure 3, Appendix D2). Within this area several large complexes of active kangaroo rat burrows were found with over a thousand burrows within the survey area. During the survey it was confirmed that these burrow

complexes were inhabited by a common kangaroo rat species due to the identification of distinctive tracks and tail drags around the burrows. Other small burrows were also discovered outside of this area of high burrow density, but they were rare, in clusters of less than a dozen, showed no signs of habitation by any listed species and are likely pocket gopher burrows.

Additionally, project operation could also result in direct or indirect impacts to wildlife in proximity to vehicle movements, vegetation maintenance, and nighttime lighting. However, the potential indirect impact from nighttime lighting during operation and maintenance would be minimized through compliance with development standards, the Kern County Zoning Ordinance, and the goals, policies, and implementation measures of the Kern County General Plan. All project lighting 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 stipulated in Mitigation Measures MM 4.1-5 through 4.1-7.

California Glossy Snake, San Joaquin Coachwhip

Neither of these species were observed during the 2020 or 2021 surveys; however, there are historical CNDDB occurrences for these species in the project vicinity. These species could occur along the potential gen-tie route in the Valley Sink Scrub habitat in Zone Map #160. Construction and ground disturbance associated with clearing and grading power pole locations within Valley Sink Scrub habitat in Zone Map #160 could result in the direct loss of individual snakes should they occur within this habitat at the time of ground disturbance. Indirect impacts could occur with the loss of suitable habitat for foraging and reduction of prey availability.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, would be considered potentially significant impacts.

Mitigation Measures

Mitigation Measures MM 4.4-15, MM 4.4-18 and MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Over the long-term it is expected that with implementation of mitigation measure MM 4.4-22 (listed under Impact 4.4-4) there would be no loss of foraging habitat, and potentially a net gain of habitat as agricultural activity is suspended within the project footprint during operations. Impacts would be less than significant.

Blunt-Nosed Leopard Lizard

No BNLL were observed during the 2020 or 2021 surveys, although large lizard scat (species unknown) was observed during the September 2020 survey in the Valley Sink Scrub habitat in the northern portion of the Zone Map #160 project footprint. Assessments of this habitat, which is the only habitat on the site considered to have some potential to support the species, during the 2021 surveys determined that there is a low probability of blunt nose leopard lizard occurring onsite due to lack of suitable burrows and isolation from other suitable areas of habitat. However, there are historical CNDDB occurrences of this species in the project vicinity. If BNLL are present within the Valley Sink Scrub habitat within the project footprint or potential gen-tie routes, direct impacts could include injury or mortality during project-related construction activities. Without appropriate avoidance and minimization measures for BNLL, potentially

significant impacts associated with ground-disturbing activities include habitat loss, burrow collapse or entrapment, reduced reproductive success, or direct mortality. If there is an active burrow within land adjacent to the project footprint or gen-tie routes, noise and vibration from construction activities 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.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures 4.4-4, MM 4.4-5, MM 4.4-15, MM 4.4-17, MM 4.4-18 (listed further below), and MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

However, implementation of Mitigation Measures MM 4.4-4, MM 4.4-5, MM 4.4-15, MM 4.4-17, and MM 4.4-18 (listed further below) would avoid direct impacts to the species. Additionally, because habitat loss is the primary threat to the species (Appendix D1), measure MM 4.4-22 (listed under Impact 4.4-4) and the applicant proposed conservation area outlined above will be implemented to reduce impacts due to habitat loss. Impacts would be less than significant.

Western Pond Turtle

Western pond turtle was not observed during the 2020 or 2021 surveys; however, there are historical CNDDB occurrences of this species in the project vicinity. The species is not expected to occur within the areas proposed for construction and ground disturbance, nor along the proposed gen-tie routes, due to the lack of suitable aquatic habitat.

No potential direct and indirect impacts associated with project construction are expected to occur to this special-status species. Therefore, no impacts would occur.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No mitigation would be required; No impacts would occur.

Least Bell's Vireo

Least Bell's vireo was not observed during the 2020 or 2021 surveys; however, there are historical occurrences of this species in the project vicinity. Approximately 30 acres of suitable foraging and breeding habitat associated with the tamarisk scrub occurs near the New Rim Ditch in Zone Map #160, and it is possible the species could be present in this habitat during the breeding and migration seasons.

Direct impacts could occur if least Bell's vireo is breeding in or near the project footprint during construction or decommissioning activities. Nests containing young could be destroyed if nest trees are

removed or disturbed, leading to injury and/or mortality. Noise, vibrations, and increased human presence from project-related activities could alter the normal behaviors of adult vireos and lead to nest failure or adversely impact foraging success. Suitable nesting and foraging habitat could be lost as a result of the project. If guy wires are required for any project infrastructure, they could serve as a collision risk for flying avian species.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impact would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-13, MM 4.4-14, MM 4.4-17, MM 4.4-18, and MM 4.4-19 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Impacts would be less than significant.

Tricolored Blackbird

No tricolored blackbirds were observed during the 2020 or 2021 surveys; however, there are historical occurrences of this species in the project vicinity. No suitable nesting habitat exists within the project footprint; marginal nesting habitat exists within adjacent lands near Zone Map #161. Direct impacts to tricolored blackbird could occur if construction activities would occur near an active nest colony or in foraging habitat during the nesting season. Noise and vibration from construction of the project and the presence of construction workers could alter the normal behaviors of nesting adults and adversely affect reproductive success. Loss of suitable foraging habitat and reduction of prey availability would also be considered a direct impact.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures 4.4-10, MM 4.4-15, MM 4.4-17, MM 4.4-18 and MM 4.4-19 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Impacts would be less than significant.

Swainson’s Hawk

Nesting

Swainson’s hawks were observed within the project site near Zone Map #159 and four Swainson’s hawk nests were observed north of the Zone Map #160 project footprint and gen-tie line. According to the database search, no nesting sites occur within the project site but there are potential nesting sites within 0.5 miles of the site. SWHA exhibit high nest-site fidelity year after year and lack of suitable nesting habitat

limits their local distribution and abundance (Appendix D1). No potential nest trees were identified within the project site and no mature trees with the potential to support nesting Swainson's hawks would be removed by the project. Indirect impacts to individual nesting Swainson's hawks outside of the project footprint could occur if construction activities occur near an active nest. Noise and vibration from such activities, and the presence of construction workers, could alter the normal behaviors of nesting adults and adversely affect reproductive success of active nests.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, with respect to nesting Swainson's hawks, impacts would be potentially significant.

Foraging Habitat

Available CNDDB records indicate there are 5 known nesting Swainson's hawk pairs occurring within 10 miles of the project site in addition to the four nests observed during the 2020 surveys. All these CNDDB records are north of the site, the closest of which is adjacent to the project footprint within the applicant proposed conservation area . The four nests observed during the 2021 surveys are located within and adjacent to the site (Figure 4, Appendix D2) The loss of foraging habitat for Swainson's hawks was evaluated in 2 ways, each using the standard assumption that Swainson's hawks typically forage within 10 miles of a nest site.

One way of evaluating the loss of foraging habitat is to assume that the 10-mile foraging area is centered on the project site. There are approximately 343,000 acres of foraging habitat within a 10-mile distance surrounding the project site that would be available for nesting Swainson's hawks. Urban and other unsuitable habitat was eliminated from potential foraging habitat acreage. The project footprint of 3,470 acres represents 1.2% of the foraging habitat available to those known occurrences of nesting Swainson's hawks, assuming they continue to be actively nesting.

A second and potentially more accurate approach to evaluating the loss of foraging habitat is to evaluate the presence of foraging habitat occurring within 10 miles of the known nesting sites. There are approximately 282,100 acres of potential foraging habitat occurring within 10 miles of these known nest sites. This foraging area overlaps only a portion of the project site, but it is assumed that the entire project footprint is within the foraging area of these nest sites. As previously stated, the project site represents approximately 1.5 % of the entire foraging area available to these known nest sites. The loss of this small amount of foraging habitat relative to that which is available for Swainson's hawk foraging would not substantially affect nesting Swainson's hawks within 10 miles of the project site.

Furthermore, a recent study in Sacramento County regarding the use solar array fields as foraging habitat by raptors concluded that Swainson's hawks and several other raptor species will forage within solar array fields (Estep 2013). The study found that solar array fields that incorporate a grassland substrate to promote rodent populations provides, unlike most crop types, a consistent and available source of prey throughout the spring and summer breeding season, particularly for Swainson's hawks.

Finally, the applicant proposed conservation area would further ensure that approximately 997 acres will be set aside as undeveloped and is expected to remain as suitable foraging habitat for Swainson's hawks for the life of the project.

Consequently, the loss of potential foraging habitat as a result of project implementation would not substantially affect this special-status species and, therefore, impacts would be considered less than significant.

Potential indirect impacts to foraging raptors from the operations and maintenance phase of the project may occur through "stranding" if the species lands within the site fencing. In addition, solar panels have elements thought to mimic water or suitable related habitat, at least to the human eye. As a result, some have theorized that solar panels may attract species that mistake the panels for bodies of water, potentially leading to increased collision-related and other risks commonly referred to as the "fake lake effect." The installation of PV solar panels has the potential to cause impacts to Swainson's hawk and other raptor species associated with collisions due to the "fake lake effect". The "fake lake effect" refers to the hypothesis that PV solar panels and power tower heliostats are reminiscent of a large body of water or open sky and may attract waterfowl or wading birds. It is thought the phenomenon could attract birds to solar project sites, thereby exposing the birds to greater risk of impacts such as potential collision with project infrastructure, the possibility of being stranded within site fencing once they land, or other forms of distress. A report commissioned by the U.S. Department of Energy analyzed available avian mortality data from utility-scale solar energy facilities and concluded that, though it is apparent that solar energy facilities present a risk of fatality for birds, additional standardized and systematic fatality data would be needed to better understand and quantify the risks (DOE 2015). That report further noted that, based on available data, there was no consistent pattern to support or refute the hypothesis that water-dependent species were more susceptible to mortality at solar facilities.

The causes of avian injuries and fatalities at commercial-scale solar projects continue to be evaluated by the USFWS, CDFW, and others. Even with monitoring data from other PV projects in California, there remains a great deal of uncertainty regarding the extent to which birds might be impacted by the proposed project because: (1) the mortality data from the other projects has been collected over a relatively short period of time and is still being evaluated; (2) in most cases, the cause of death is not clear; and (3) mortality information from one project location is not necessarily indicative of the mortality that might be found at another project location. Therefore, the "fake lake effect" does not have a significant direct or indirect impact on migratory birds including foraging raptors.

Although prey sources such as rodents and small birds are likely to still inhabit the area around solar panels on the project site, the solar panels may provide shielding and making them difficult to detect by raptors flying overhead. Raptors may be able to use the solar panels, perimeter fencing and utility structures surrounding the facilities as perch sites for hunting. It is not expected that the Swainson's hawk would use the project site for foraging due to the absence of agricultural fields, which is this species' preferred type of foraging habitat in the region. Therefore, while availability of potential foraging habitat would be reduced due to the presence of solar panels and associated facilities, this reduction would not be significant due to the low potential for Swainson's hawk to occur onsite. In addition, solar PV panels consist of non-reflective glass that minimizes the "fake lake-effect."

Mitigation Measures

Mitigation Measures MM 4.4-11, MM 4.4-12, MM 4.4-17, and MM 4.4-18 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Mitigation Measures MM 4.4-11, MM 4.4-12, MM 4.4-17, and MM 4.4-18 (listed further below), and implementation of the applicant-proposed conservation area described above that will ensure that approximately 997 acres will be set aside as suitable foraging habitat for the life of the project. Impacts would be less than significant.

White-Tailed Kite

White-tailed kites were not observed during the 2020 or 2021 surveys; however, there are historical CNDDB occurrences of this species in the project vicinity. However, if white-tailed kite were present in the project footprint during construction, direct impacts to white-tailed kite could occur if construction activities occur near an active nest during the nesting season. Noise and vibration from construction of the project, or the presence of construction workers, could alter the normal behaviors of nesting adults, resulting in harm or mortality to eggs or nestlings. The loss of approximately 2,473 acres of suitable foraging habitat and the resulting reduction in prey availability in the area could result in indirect impacts through increased competition for limited resources over the long-term.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-10, MM 4.4-15, MM 4.4-17, MM 4.4-18 and MM 4.4-19 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Impacts would be less than significant.

Burrowing Owl

Burrowing owl was observed within Zone Map #160 during the 2020 surveys and there are historical CNDDB occurrences of this species in the project vicinity. Although much of the project footprint is highly disturbed and contains low-quality burrowing and foraging habitat, suitable nesting and foraging habitat exists within adjacent lands and in several areas within the project footprint and along the potential gen-tie routes. Because this species nests and shelters (year round) within small mammal burrows as well as within human-created crevices and holes such as pipes, rock piles, and culverts, individual burrowing owls could be injured or killed as a result of burrow collapse or inadvertent entrapment during construction-related ground disturbance activities. If there is an active burrow within the project footprint or potential gen-tie area during construction, noise and vibration from construction activities could adversely alter the nesting behaviors of adult owls which could result in abandonment of nests with eggs or young and/or reduced reproductive success. The loss of approximately 2,473 acres of suitable foraging habitat and the resulting reduction in prey availability in the area could result in indirect impacts through increased competition for limited resources over the long-term.

During the 2021 surveys, three burrows of adequate size to provide habitation for either burrowing owl or San Joaquin kit fox were identified during the survey. A burrowing owl was observed flying through the project area, but a thorough examination of the area of the siting revealed no burrows showing any signs of burrowing owl habitation.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-6, MM 4.4-8, MM 4.4-15, MM 4.4-17, MM 4.4-18 (listed further below), MM 4.4-19, MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Over the long-term it is expected that with implementation of MM 4.4-22 (listed under Impact 4.4-4) there would be no loss of foraging habitat, and potentially a net gain of habitat as agricultural activity is suspended within the project footprint during operations. Impacts would be less than significant.

Loggerhead Shrike

One adult loggerhead shrike was observed foraging in a recently disked field near a potential gen-tie route during the 2020 surveys and there are historical CNDDB occurrences of this species in the project vicinity. Native vegetation adjacent to the project footprint and within the potential gen-tie route in which the adult shrike was observed contains suitable foraging and nesting habitat for this species and the likelihood of additional loggerhead shrikes occurring on-site is high. Impacts to loggerhead shrike during the nesting season include the potential for direct removal of active nests. In addition, if construction activities occur near an active nest, noise and vibration from construction and the presence of construction workers could alter the normal nesting behaviors of adults which can result in harm or mortality to eggs or nestlings as a result of nest abandonment. Loss of up to 2,473 acres of suitable foraging habitat could result in indirect impacts through increased competition for limited resources over the long-term.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-10, MM 4.4-15, MM 4.4-17, MM 4.4-20 and MM 4.4-19 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Impacts would be less than significant.

Northern Harrier

One adult northern harrier was observed foraging adjacent to Zone Map #159 during the 2020 surveys and there are historical CNDDB occurrences of this species in the project vicinity. Suitable nesting habitat occurs on the project site within Zone Map #160, and suitable foraging habitat occurs throughout all areas of the site. Potential impacts to loggerhead shrike during the nesting season include the potential for direct removal of active nests. In addition, if an active nest occurs adjacent to active construction sites, noise and vibration from construction activities, plus the presence of construction workers, could alter the normal nesting behavior of adults resulting in harm or mortality to eggs or nestlings as a result of nest abandonment. The loss of suitable foraging habitat could result in indirect impacts through increased competition with conspecifics for limited resources over the long-term.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-10, MM 4.4-15, MM 4.4-17, MM 4.4-18 and MM 4.4-19 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Impacts would be less than significant.

LeConte's Thrasher

While there is a historical occurrence record for this species in the project vicinity, no individuals of this species were observed during the 2020 or 2021 surveys. However, the Valley Sink Scrub in Zone Map #160 represents marginally suitable nesting and foraging habitat for the species and it could occur or even nest in this area in the future. Potential impacts to LeConte's thrasher during the nesting season include the potential for direct removal of active nests. In addition, if an active nest occurs adjacent to active construction sites, noise and vibration from construction activities, plus the presence of construction workers, could alter the normal nesting behavior of adults resulting in harm or mortality to eggs or nestlings as a result of nest abandonment. The loss of suitable foraging habitat could result in indirect impacts through increased competition with conspecifics for limited resources over the long-term.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-10, MM 4.4-15, MM 4.4-17, MM 4.4-18 and MM 4.4-19 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Impacts would be less than significant.

Tipton Kangaroo Rat, Short-nosed Kangaroo Rat

Trapping for Tipton kangaroo rat and short-nosed kangaroo rat was not conducted, and presence or absence of these species within the project site is unknown. However, there are historical CNDDB occurrences of both species in the project vicinity. Valley Sink Scrub and Annual Grassland vegetation within and adjacent to Zone Map #160 of the project site represents suitable burrowing and foraging habitat for these species; numerous small mammal burrows, including many characteristic of kangaroo rat, were present in this area. If either species were present during project construction, ground disturbance activities could result in injury or mortality of individual kangaroo rats as a result of burrow collapse or entrapment. If either species occurs on land adjacent to the project footprint or potential gen-tie routes, noise and vibration from construction activities could alter the daily behaviors of individuals and affect foraging activity and reproductive success.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-5, MM 4.4-15, MM 4.4-17, MM 4.4-18 (listed further below) and MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Over the long-term it is expected that with implementation of mitigation measure MM 4.4-22 (listed under Impact 4.4-4) there would be no loss of foraging habitat, and potentially a net gain of habitat as agricultural activity is suspended within the project footprint during operations. Impacts would be less than significant.

San Joaquin Kit Fox

While focused protocol surveys were not conducted for this species, no individuals or their sign were observed during the 2020 or 2021 surveys. Valley Sink Scrub and Annual Grassland vegetation within and adjacent to Zone Map #160 of the project site represents suitable burrowing and foraging habitat for these species. In addition, SJKF have occurred historically in the project area, both in grassland and/or shrubland habitats, as well as in adjacent agricultural areas. SJKF also den in a variety of areas such as rights-of-way (ROWs), vacant lots, agricultural and fallow or ruderal habitat, dry stream channels, and canal levees, and populations can fluctuate over time; dens that could potentially be used by SJKF were observed during the 2020 reconnaissance surveys and 2021 burrow surveys in the Valley Sink Scrub vegetation in Zone Map #160. SJKF may also be attracted to areas on the project site due to the type and level of ground-disturbing activities and the loose, friable soils resulting from intensive ground disturbance and may use areas of the site, including agricultural and rural areas, as foraging and dispersal corridors.

Because this species is highly mobile, individual foxes could take shelter in burrows/dens, trenches, and pipes within the project area during construction activities. As such, direct impacts could include entrapment in trenches or pipes during construction or even injury or mortality if taking shelter within available burrows/dens. If there is an active breeding den within the project footprint during construction activities, noise and vibration from construction activities could alter the daily behaviors of individuals and affect breeding and foraging activity. Mortalities from vehicle strikes are also possible but the proposed project would not cause an appreciable increase in traffic at night when the species is most active.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-6 through MM 4.4-9, MM 4.4-15, MM 4.4-17, MM 4.4-18 (listed further below) and MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Over the long-term it is expected that with implementation of mitigation measure MM 4.4-22 (listed under Impact 4.4-4) there would be no loss of foraging habitat, and potentially a net gain of habitat as agricultural activity is suspended within the project footprint during operations. Impacts would be less than significant.

San Joaquin Antelope Squirrel

Trapping for San Joaquin antelope squirrel was not conducted and presence or absence of this species within the project site is unknown; however, there are historical CNDDB occurrences of this species in the project vicinity. Valley Sink Scrub and Annual Grassland vegetation within and adjacent to Zone Map #160 of the project site represents suitable burrowing and foraging habitat for this species. If this species were present within Zone Map #160 of the project footprint, direct impacts including injury or mortality could occur as a result of burrow collapse or entrapment. If this species occurs on land adjacent to the project footprint or potential gen-tie routes, noise and vibration from construction activities could alter the daily behaviors of individuals and adversely affect foraging activity and reproductive success.

During the 2021 surveys no San Joaquin antelope squirrels were observed at the site, despite the fact that the lead biologist identified active San Joaquin antelope squirrel activity elsewhere in Kern County during the same days the surveys were conducted. No evidence of burrows for this species were located in the survey area.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-5, MM 4.4-15, MM 4.4-17, MM 4.4-18 (listed further below) and MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Over the long-term it is expected that with implementation of MM 4.4-22 (listed under Impact 4.4-4) there would be no loss of foraging habitat, and potentially a net gain of habitat as agricultural activity is suspended within the project footprint during operations. Impacts would be less than significant.

American Badger

American badger was not observed during the 2020 or 2021 surveys; however, there are historical CNDDB occurrences of this species in the project vicinity. Suitable denning and foraging habitat is present in many areas of the project footprint, particularly within Valley Sink Scrub and Annual Grassland vegetation within Zone Map #160. If this species were present onsite within areas subject to ground disturbance, direct impacts including injury or mortality could occur as a result of burrow collapse or entrapment. If an active den were present within or adjacent to the project footprint or gen-tie areas during construction, noise and vibration from construction activities could alter the daily behaviors of individuals and adversely affect foraging activity and reproductive success.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-6 through MM 4.4-8, MM 4.4-15, MM 4.4-17, MM 4.4-18 (listed further below) and MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Over the long-term it is expected that with implementation of MM 4.4-22 (listed under Impact 4.4-4) there would be no loss of foraging habitat, and potentially a net gain of habitat as agricultural activity is suspended within the project footprint during operations. Impacts would be less than significant.

Tulare Grasshopper Mouse

Trapping for this species was not conducted and presence or absence of this species within the project site is unknown; however, there are historical CNDDB occurrences of this species in the project vicinity. Valley Sink Scrub and Annual Grassland vegetation within and adjacent to Zone Map #160 of the project site represents suitable burrowing and foraging habitat for this species. If this species were present within Zone Map #160 of the project footprint, direct impacts including injury or mortality could occur as a result of burrow collapse or entrapment. If this species occurs on land adjacent to the project footprint or potential gen-tie routes, noise and vibration from construction activities could alter the daily behaviors of individuals and adversely affect foraging activity and reproductive success.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-5, MM 4.4-15, MM 4.4-17, MM 4.4-18 (listed further below) and MM 4.4-22 (listed under Impact 4.4-4) would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Over the long-term it is expected that with implementation of MM 4.4-22 (listed under Impact 4.4-4) there would be no loss of foraging habitat, and potentially a net gain of habitat as agricultural activity is suspended within the project footprint during operations. Impacts would be less than significant.

Other Nesting Birds

The majority of the project footprint and adjacent lands, as well as areas along the proposed gen-tie routes, contain suitable nest habitat for a wide variety of common bird species. Ground-nesting species may utilize the disked fields, row crop and dirt roads through the agricultural parcels within the project footprint and along the gen-tie routes. Power poles located in parcels and trees/shrubs within and adjacent to the site could also be used by nesting birds. Although no trees are anticipated to be removed, noise, vibration, and increased human activity levels associated with project construction activities adjacent to nesting birds can result in altered behaviors in nesting adults which could lead to nest failure.

These potential direct and indirect impacts associated with project construction are considered substantial effects on a special-status species and, therefore, impacts would be potentially significant.

Mitigation Measures

Mitigation Measures MM 4.4-10, MM 4.4-17, MM 4.4-18 and MM 4.4-19 would be required. See below for details regarding these mitigation measures.

Level of Significance After Mitigation

Impacts would be less than significant.

Mitigation Measures

MM 4.4-4 **Protocol-level Surveys and/or Avoidance of Blunt-nosed Leopard Lizard.** The area of Valley Sink Scrub habitat located in Zone Map #160 contains suitable habitat, including burrows, for BNLL. If project activities in this area cannot be avoided (i.e., solar arrays or power pole locations) and if small mammal burrows cannot be avoided by ground-disturbing activities (e.g. excavation or grading) with a 50-foot buffer per MM 4.4-5, qualified biologists shall conduct protocol-level surveys for blunt-nosed leopard lizard at disturbance locations within the 50-foot burrow buffer according to the *Approved Blunt-nosed Leopard Lizard Survey Methodology,* as revised as of October 2019 (Appendix D1), or using another survey protocol approved by USFWS and CDFW. Project activity outside the specified 50-foot buffer may proceed while surveys are conducted. Overland travel not requiring ground disturbance may be permitted within the 50-foot buffer under the direct supervision of a qualified biologist. If no blunt-nosed leopard lizard is observed during the survey no further action is required. If blunt-nosed leopard lizards are observed during the survey, then the measures below should be implemented:

- Mitigation Measure MM 4.4-5 should be implemented to avoid all blunt-nosed leopard lizards that might be present in underground burrows. This would only be required in areas where blunt-nosed leopard lizards were determined to be present.
- All construction activities occurring during the active BNLL season in areas where BNLL were determined to be present shall require that on-site biological monitors be present at each site where activities are occurring within these areas. If a BNLL is present within 50-feet of the construction activities, the monitor shall halt all activities until the BNLL leaves the 50-feet area on its own accord.
- Consultation with the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) will occur and an incidental take permit will be sought from USFWS if take of BNLL habitat (as defined by the federal Endangered Species Act) cannot be avoided. An incidental take permit would ensure that any impacted habitat is offset with mitigation habitat at a ratio to be determined in consultation with USFWS. Consultation with CDFW will ensure that no direct take of individual BNLL occurs given the protection afforded to this species as a Fully Protected Species under Fish and Game Code 5050.

MM 4.4-5 **Avoidance of Small Mammal Burrows.** Tipton kangaroo rat, Tulare grasshopper mouse, blunt-nosed leopard lizard, and San Joaquin antelope squirrel depend on small mammal burrows for critical life functions. The Valley Sink Scrub habitat located in Zone Map #160 contains small mammal burrows. Any construction of solar panel fields within the project footprint, and temporary access roads and tower locations for the gen-tie routes in non-

cultivated habitat types will be sited to avoid small mammal and other fossorial burrows. A pre-construction survey to search the proposed gen-tie project alignment for listed species and suitable burrows will be conducted in suitable habitat prior to ground-disturbing activities associated with project activities. Surveys for burrow locations that will inform the location of temporary access roads and gen-tie towers may be conducted earlier in the project design cycle, but the final survey for burrows will occur no more than 30 days before the beginning of the gen-tie line construction to ensure an up-to-date understanding of burrowing locations prior to actual siting. Existing survey information on the location of burrows and a 50-foot buffer around the existing burrows will be used to avoid burrows when planning the placement of solar panel stations, access routes and placement of gen-tie tower facilities.

If small mammal burrows cannot be avoided by ground disturbing activity (e.g. excavation or grading) with a 50 –foot buffer, then verification trapping or other method as developed in consultation with CDFW and USFWS will be conducted in those areas of the buffer that cannot be avoided. If it is determined that the Tipton kangaroo rat or San Joaquin antelope squirrel is absent, then no further measures are warranted. If present, the following measures should be implemented:

- The loss of occupied habitat should be compensated at a an agreed upon ratio with the appropriate agencies but no less than a 1:1 ratio to ensure no net loss of habitat.
- Consultations with the USFWS and CDFW will occur and Incidental Take Permits acquired if take of listed species cannot be avoided.
- If it is determined that the Tulare grasshopper mouse is present, a biological monitor should be on site to relocate any animals that might not leave the work site on their own volition.

MM 4.4-6 **Avoidance of Burrows for Burrowing Owl, American Badger, and SJKF.** Within 14 days prior to the start of project ground-disturbing activities, a pre-activity survey with a 500-foot buffer where land access is permitted should be conducted by a qualified biologist knowledgeable in the identification of these species and approved by the CDFW. Surveys need not be conducted for all areas at one time; they may be phased so that surveys occur within 14 days of the portion of the project site that will be disturbed. If dens/burrows that could support any of these species are discovered during the pre-activity surveys conducted under MM 4.4-15, the avoidance buffers outlined below should be established. No work would occur within these buffers unless the biologist approves and monitors the activity.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

If burrowing owl are found within these recommended buffers and avoidance is not possible, burrow exclusion would be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. Replacement of occupied burrows with artificial burrows shall occur at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) to mitigate for evicting burrowing and the loss of burrows. Burrowing owl may attempt to colonize or re-colonize an area that will be

impacted; thus, ongoing surveillance shall occur at excluded burrows at a rate that is sufficient to detect burrowing owl if they return.

American Badger/SJKF

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal or pupping den – 500 feet, unless otherwise specified by CDFW.

MM 4.4-7 **Burrowing Owl, American Badger, and SJKF Detection.** Within 14 days of the start of project ground-disturbing activities, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of these species. If, during construction activities, a live burrowing owl, American badger, or SJKF is encountered, all construction activity should stop in the affected area until the animal leaves of its own volition. The special-status species should be avoided by construction activities and construction workers and allowed to leave the project site without harassment.

MM 4.4-8 **Burrowing Owl, American Badger, and SJKF Avoidance.** A qualified biologist should remain on-call throughout the construction phase in the event that a burrowing owl, American badger, or SJKF occurs on the site during construction. If one of these species occurs on-site, the biologist should be contacted immediately to determine whether biological monitoring or the implementation of avoidance buffers may be warranted.

MM 4.4-9 **Standard Avoidance and Minimization Measures for the protection of SJKF.** The following avoidance and minimization measures should be implemented during all phases of the project to reduce the potential for impact from the project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered SJKF Prior to or During Ground Disturbance* (USFWS 2011, Appendix E).

a. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction or project site.

b. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds shall not exceed 20 miles per hour (mph) within the project site.

c. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored on the project site shall be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted and USFWS and CDFW shall be consulted.

d. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures

with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS and CDFW have been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

e. No pets, such as dogs or cats, shall be permitted on the project sites to prevent harassment, mortality of kit foxes, or destruction of dens.

f. Use of anti-coagulant rodenticides and herbicides in project sites shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes.

g. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative shall be identified during the employee education program and their name and telephone number shall be provided to the USFWS.

h. The Sacramento Fish and Wildlife Office of USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to a SJKF during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact can be reached at (559) 243-4014 and R4CESA@wildlifeca.gov.

i. All sightings of the SJKF shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the Service at the address below.

j. Any project-related information required by the USFWS or questions concerning the above conditions, or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at: Endangered Species Division, 2800 Cottage Way, Suite W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600.

MM 4.4-10 **Pre-activity Surveys for Nesting Birds.** If project construction activities will be initiated during the nesting season (February 1 to September 15), a pre-activity nesting bird survey should be conducted within 14 days prior to the start of construction. The surveys should encompass the project site and accessible or land visible from accessible areas within a 250-foot buffer for songbirds and a 500-foot buffer for raptors. The surveys may be phased with construction of the project. The surveys shall also evaluate presence/absence of

tricolored blackbird nesting colonies in proximity to project activities and to evaluate whether there is a potential for project-related impacts. If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. Surveys for burrowing owl will follow CDFW protocol.

If active nests are found during the survey or at any time during construction of the project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest, or if breeding attempts have otherwise been unsuccessful. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.

If an active tricolored blackbird nesting colony is found during preconstruction surveys, a no-disturbance buffer will be established in accordance with CDFW's "Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agriculture Fields in 2015" (Appendix D1). This buffer will depend on the nature of the activity being conducted near the colony. For disturbances that are short in duration a 60-foot buffer would be appropriate. More intensive construction activities may require a buffer of up to 300 feet at the discretion of the biological monitor. The buffer will remain in place until the breeding season has ended or until a qualified biologist has determined that nesting has ceased, the birds have fledged, and are no longer reliant upon the colony or parental care for survival.

MM 4.4-11 **Pre-activity Surveys for Swainson's Hawk Nests.** If project construction activities must occur during the Swainson's hawk nesting season (February 15 to August 31), pre-construction activity surveys should be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee (Appendix D1). Timing and the number of phases of surveys can be adjusted based on the timing of the construction schedule. The surveys maybe phased to coincide with active construction areas plus a 0.5-mile buffer of those areas.

MM 4.4-12 **Swainson's Hawk Nest Avoidance.** No mature trees that could be used by nesting Swainson's hawk will be removed during construction of the project. If an active Swainson's hawk nest is discovered at any time within 0.5 miles of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this project. Based on this assessment, the biologist will determine if construction activities can proceed, and the level of nest monitoring required. Construction activities should not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist should have the authority to stop work if it is determined that project

construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season.

MM 4.4-13 **Pre-activity Surveys for Least Bell's Vireo.** If project construction activities must occur during the least Bell's vireo breeding season (April 1 to July 31), protocol least Bell's vireo surveys should be conducted by a qualified biologist in accordance with the Least Bell's Vireo Survey Guidelines (Appendix D1). The survey would consist of eight surveys conducted between April 10 and July 31, although construction may continue while surveys are conducted unless and until a least Bell's vireo nest is discovered, at which point MM 4.4-14 would be implemented. The surveys would be conducted within suitable habitat within the project footprint and survey buffer plus suitable habitat that is legally accessible within 0.25 mile, as per the guidelines.

If no least Bell's vireo nests are found, no further action is required.

MM 4.4-14 **Least Bell's Vireo Nest Avoidance.** If nesting least Bell's vireos are observed at any time within 0.25 miles of active construction, work will not occur within 0.25 miles of the nest until a qualified biologist has determined that the young have fledged.

MM 4.4-15 **Preconstruction Clearance Survey.** Within 14 days prior to the start of ground disturbance activities, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of all special-status plant and wildlife species on native habitat subject to disturbance. All suitable burrows that could support BNLL, Tipton kangaroo rat, Tulare grasshopper mouse, or other special-status wildlife species will be avoided during construction in accordance with MM 4.4-4 and MM 4.4-5. Consultation with the USFWS and CDFW may be required if listed or fully protected species are detected during the survey.

MM 4.4-16 **California Glossy Snake and San Joaquin Coachwhip Avoidance and Minimization.** If the species are present within the work area they will be allowed to leave on their own. If they do not leave, the qualified biologist may capture and relocate them to nearby suitable habitat at an appropriate distance to ensure the animal will be safe.

MM 4.4-17 **Worker Environmental Awareness Training.** Prior to the initiation of construction activities, all construction personnel should attend a Worker Environmental Awareness Training program developed by a qualified biologist. Any personnel associated with construction that did not attend the initial training shall be trained by the authorized biologist prior to working on the project site. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training program prior to starting work on the project and on an annual basis. The Program shall be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s). The program should include information on the life histories of special-status species with potential to occur on the project, their legal status, course of action should these species be encountered on-site, and

avoidance and minimization measures to protect these species. It shall include the components described below:

a. Information on the life history and identification of special-status species that may occur or that may be affected by project activities. The program shall also discuss the legal protection status of each such species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements.

b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education program has been completed shall be kept on file at the construction site.

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 Worker Environmental Awareness Training and Education program, and signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department.

d. A copy of the training transcript, training video or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with as necessary.

e. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.

f. The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from project activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service.

MM 4.4-18 **On-Site Biological Monitoring.** During construction of portions of the project (APNs 295-130-57, 295-100-19, 295-130-48, 295-130-51, 295-130-21, 295-130-26, 295-130-27, 295-120-15, and 295-130-81), including the gen-tie line that occur within native habitat (Valley Sink Scrub), a biological monitor with halt-work authority will be present to observe activities. During construction, the qualified biologist will have the authority to order a halt to construction activities in the following instances: (1) a biological monitor observes activities that may result in mortality or harm to a listed or fully protected species (BNLL) or (2) a biological monitor observes any of the mitigation and avoidance measures are not being implemented properly. Construction will resume when either the listed species moves out of harm's way on its own or the avoidance and minimization measures that are not being implemented properly are rectified.

MM 4.4-19 **Bird Flight Diverters.** If guy wires are required for any project infrastructure, such use will be minimized to the extent possible. Any guy wires would be installed with bird flight diverters at no less than 15-foot spacing to reduce the potential for collision from flying birds.

Level of Significance After Mitigation

Impacts would be less than significant.

Impact 4.4-2: Implementation of the proposed project could 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.

One sensitive plant community, Valley Sink Scrub, is expected to be impacted by project implementation. Although some impact may occur from the proposed gen-tie route, this impact is anticipated to consist of less than five acres. Additionally, the applicant proposed conservation area will allow for the development restriction of approximately 900 acres of this habitat by remaining undeveloped.

The loss of Valley Sink Scrub is considered a substantial effect on a CDFW designated sensitive plant community and, therefore, impacts would be potentially significant.

Mitigation Measures

MM 4.4-20 **Restoration of Temporary Impacts in Sensitive Plant Communities.** Valley Sink Scrub should be avoided to the maximum extent possible. Any Valley Sink Scrub habitat that is permanently impacted shall be mitigated by preserving compensation land at a ratio of 2:1 acres.

Level of Significance After Mitigation

The applicant proposed conservation area outlined above would avoid project impacts on approximately 900 acres of Valley Sink Scrub habitat. Mitigation Measure MM 4.4-2 would be implemented to reduce temporary impacts, and mitigation measure MM 4.4-20 would be implemented to compensate for permanent impacts. Impacts would be 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.

A formal delineation of wetlands or water features that may be impacted by the project was not conducted during the 2020 or 2021 surveys. Potential jurisdictional wetlands or waters are located in Zone Maps #160 and 161. While it is not anticipated that jurisdictional aquatic resources will be directly impacted by the proposed solar array infrastructure, an approximate 3-mile portion of the proposed gen-tie route in Zone Map #160 may permanently impact approximately 0.3 acre of these resources. In addition to direct impacts to resources, construction activities have the potential to cause storm water runoff to jurisdictional resources. The loss of any wetlands/waters determined to be under the jurisdiction of the USACE, CDFW, and/or RWQCB is considered a substantial effect on a sensitive aquatic resource and, therefore, impacts would be potentially significant.

Mitigation Measures

MM 4.4-21 Wetland and Waters Delineation

1. Prior to issuance of any grading or building permit, the project proponent/operator shall conduct a preliminary assessment of the identify aquatic features on the project site to determine which of these features could potentially be under the jurisdiction of the USACE, CDFW, and/or RWQCB. The report will include a discussion of the methods and results, including maps, of the assessment of all potentially jurisdictional aquatic features at the project site and will be submitted to the County.
2. If the proponent determines that the project could directly or indirectly impact aquatic resources potentially under the jurisdiction of the USACE, CDFW, and/or RWQCB, a formal aquatic resource delineation of these areas will be performed pursuant to accepted agency delineation protocols by a qualified professional to determine the extent of agency jurisdiction and the extent of potential impacts to agency jurisdiction.
3. If it is determined that aquatic features under agency jurisdiction will be impacted, the appropriate permits and authorizations from the regulating agencies shall be obtained prior to disturbance to jurisdictional features. The permit/authorization process typically includes the submittal of a detailed jurisdictional delineation report, measures to avoid, minimize, and/or mitigate for impacts, and required applications to each resource agency and consultations with agency staff.
4. As part of the permit/authorization application process, compensatory mitigation may be required by the agencies to offset the loss of aquatic resources. If so, and as part of the permit application process, a qualified professional shall draft a mitigation and monitoring plan to address implementation and monitoring requirements expected to be included under the permit to ensure that the project would result in no net loss of habitat functions and values. The plan shall contain, at a minimum, mitigation goals and objectives, mitigation location, a discussion of actions to be implemented to mitigate the impact, monitoring methods and performance criteria, extent of monitoring to be conducted, actions to be taken in the event that the mitigation is not successful, and reporting requirements. The plan shall be approved by the appropriate regulating agencies and compensatory mitigation shall take place either on site or at an appropriate off-site location.
5. Any material/spoils generated from project activities containing hazardous materials will be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.
6. Equipment containing hazardous liquid materials will be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and at least 50 feet outside the delineated boundary of jurisdictional water features.
7. Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned, and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.

Level of Significance After Mitigation

Impacts would be less than significant.

Impact 4.4-4: The project could 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.

Although the project is located within the Pacific Flyway, it is very small in comparison to the entirety of the Flyway, which covers all of California. The project is low-lying and is not expected to impact avian migratory movements within the Flyway.

The project is not located within a mapped wildlife movement corridor or linkage. There were no small-scale, local movement corridors such as drainages or riparian habitat identified within the project footprint during the survey. Local irrigation canals and ditches may be used by local wildlife to travel through the vicinity, although these irrigation canals and ditches will not be impacted by the project and no measures are warranted.

In April 2012, a SJKF Dispersal Study for the Maricopa Sun Solar Complex Project was conducted (Appendix D1) Based on the results of this study, suitable SJKF habitat occurs adjacent to Zone Map #160 and SJKF could occur as a transient forager within the project footprint, particularly within Zone Map #160.

The potential of blocking SJKF and other animal species from moving through the proposed project is considered a substantial effect on wildlife movement and, therefore, impacts would be potentially significant.

Mitigation Measures

MM 4.4-22 **Fence Design and Site Permeability.** Fences installed on the perimeter of the solar project site will be designed to allow for passage of SJKF, their prey and other listed wildlife, while impeding the passage of larger predators of kit foxes, such as coyotes and larger domestic dogs. Perimeter fencing shall consist of wire fencing, with openings from 3 to 7 inches square and will be installed inverted, with the larger openings at the bottom to allow SJKF to pass through. Chain link fencing may also be used if it is installed with a 4-6-inch gap from the bottom of the fencing material shall be knuckled back to from a smooth edge. Alternate designs may also be constructed with prior written approval from CDFW and USFWS. In addition, low vegetation will be maintained within the solar arrays so that wildlife such as SJK can utilize the project area during operation.

Level of Significance After Mitigation

Impacts would be less than significant.

Impact 4.4 5: The project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The project does not conflict with the County of Kern General Plan and is not subject to any local ordinances. Because the project does not conflict with local policies or ordinances protecting biological resources, no impacts would occur.

Mitigation Measures

No mitigation measures would be required.

Level of Significance After Mitigation

No mitigation would be required; No impacts would occur.

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 PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan (HCP) overlaps the proposed project. The HCP only applies to PG&E maintenance projects and does not apply to the currently proposed project, and the project does not conflict with any provision of this HCP.

A portion of the Zone Map #160 project footprint is within the boundaries of the Maricopa Sun Solar Complex HCP and the associated State Incidental Take Permit (ITP). In order for the project to be covered under the Maricopa Sun Solar HCP/ITP, both permits would have to be amended to include the proposed project proponent. However, the HCP and ITP allows for construction and operation of a solar PV facility within the project footprint, and therefore the project would not conflict with implementation of the HCP or ITP.

The project is entirely within the boundary of the Kern County Valley Floor Habitat Conservation Plan. However, the plan is still in draft form and has not been officially adopted. As such, the proposed project would not conflict with the provisions of this HCP.

Because the proposed project will not conflict with an adopted Habitat Conservation Plan or Natural Conservation Community Plan, or other approved local, regional or state habitat conservation plan, no impacts would occur.

Mitigation Measures

No mitigation measures would be required.

Level of Significance After Mitigation

No impacts would occur.

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 4.4-22.

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 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. Interstate 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.

As described above, a number of special-status species that 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.

The residual effects on migratory birds of the project were determined to be less than significant. This cumulative analysis analyzes the potential for these incremental impacts of the project to combine with other past, present, and reasonably foreseeable projects to cause or contribute to a significant cumulative effect within the Central Valley portion of the Pacific Flyway for the duration of the project. Identified cumulative projects that involve the installation of PV panels have the potential to cause impacts to migratory birds associated with collisions. Little is known about the potential for impacts to migratory birds associated with the "lake effect." However, significant impacts to migratory birds could occur due to collision with PV panels or other project structures causing mortality or injury. Further, as take authorization for migratory bird species is not available, any mortality of migratory birds would be considered significant under CEQA. Therefore, the project, in combination with all identified cumulative projects, would result in a cumulatively significant impact on migratory birds that may remain significant and unavoidable after implementation of mitigation.

Mitigation Measures

Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-22 would be required.

Level of Significance after Mitigation

As a result of this project, cumulative projects impacts to transient wildlife species, including burrowing owls, other raptors, San Joaquin kit fox, and migratory birds would occur. Cumulative impacts would be significant and unavoidable.

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4.5 Cultural Resources

This section describes the existing cultural resources conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Sandrini Solar Project (project).

4.5.1 Introduction

This section is based on the cultural resources technical report, Class III Inventory/Phase I Survey, Sandrini Solar Farm Project, Kern County, California, and associated technical report addendum dated April 28, 2021, both of which are provided in Appendix E of this Environmental Impact Report (EIR). The report details the results of a cultural resources records search, field survey, and resource evaluations for the project, along with Native American consultation conducted by County of Kern (County) staff in accordance with Assembly Bill (AB) 52 and Senate Bill (SB) 18. The report was prepared in compliance with Section 5024.1 of the California Public Resources Code (PRC) and the California Environmental Quality Act (CEQA) to identify archaeological, historic built architectural, and other cultural resources on the project site. Due to the confidential nature of the location of cultural resources, information regarding locations of cultural resources has been removed from the report and is not included in the appendix.

Methods used to identify archaeological, historic, and built architectural resources in the study area were implemented in compliance with CEQA and are described in more detail below and in Appendix E of this EIR. For the purposes of CEQA, "cultural resources" generally refer to prehistoric and historic archaeological sites, isolates, and the built environment. Cultural resources also include areas that are of cultural significance to, or affiliated with, Native American tribes. Project impacts to tribal cultural resources are evaluated in Section 4.16, *Tribal Cultural Resources*.

Cultural Resource Terminology

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 floodplains, in river beds, and in estuaries.
- **Archaeological Site:** A site is a 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 event 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 resources 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 non-native 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 (CRHR); (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/or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California 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 11,700 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 International Commission on Stratigraphy. 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 Section 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 is located in the southern San Joaquin Valley along the northern margin of the Tehachapi Mountains, within California's Central Valley, which extends from the Siskiyou Mountains in the north to the Tehachapi Mountains in the south and covers an area 450 miles long and 250 miles wide. The Central Valley is bound by the Cascade Ranges and Sierra Nevada in the east, and the Coast Ranges in the west. The study area consists of six separate blocks totaling approximately 3,240 acres (Blocks 1–6). The study area also includes primary gen-tie line routes totaling approximately 15 miles in length. Including a 50-foot survey buffer, the gen-tie line route represents 182 acres, for a total study area size of 3,422 acres.

Paleoenvironment

The cultural resources study area is located between 320 feet and 440 feet in elevation on the open flats of the San Joaquin Valley. Prior to the beginning of land reclamation efforts, in the nineteenth century, this area was near the southern shore of Kern Lake, a water body that varied in horizontal extent seasonally and over time. The valley is effectively a flat alluvial plain; therefore, the surrounding terrain was periodically inundated, with the size of the lake expanding and contracting as hydrological factors changed. The historical natural environment of the study area, accordingly, would have been swampy, marshy, and lacustrine habitats (Appendix E). Following land reclamation, the study area had been farmed for over a century, and no native vegetation is present. The study area has a moderate to high potential for buried archaeological deposits (Appendix E). A site sensitivity model, designed for this portion of the San Joaquin Valley specifically, however, determined that most of the study area west of Interstate 5 has a low probability for archaeological sites, and those portions of the study area east of Interstate 5 have a moderate probability for archaeological sites (ASM Affiliates 2015).

Ethnographic Setting

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada during the ethnographic period.

The study area most likely lies in Hometwoli Yokuts territory, with the principal historic village for this group being Pohalin Tinliu, located on the south shore of Kern Lake (Appendix E). Most Yokuts groups

were organized as a recognized and distinct tribelet. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 people (Kroeber 1925). Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the winatum, a herald or messenger and assistant chief. A shaman also served as religious officer. Although shamans did not have any direct political authority, they maintained substantial influence within their tribelet (Appendix E).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout what is now California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native Californian tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed (Appendix E).

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in what is now California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people currently reside in the southern San Joaquin Valley (Appendix E). For additional details on the ethnographic setting of the project site, refer to Appendix E.

Historic Context

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (Appendix E). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in Northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (Appendix E). After the annexation of California by the United States, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing sheep and cattle. As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock of cattle, sheep, and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin Valley came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Appendix E). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable

enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006). Following the passage of statewide "no-fence" laws in 1874, ranching practices began to decline while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into their fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County (Appendix E).

During the period of reclaiming agriculturally unproductive land in the southern San Joaquin Valley, grants were given to individuals who had the resources and finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting agriculture and oil production (Pacific Legacy 2006). According to General Land Office records, the Southern Pacific Railroad patented its route north of Bakersfield between 1874 and 1877. The railroad apparently was constructed a few years prior (Appendix E).

Three competing partnerships developed during this period that had a great impact on control of water, land reclamation, and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (3 feet wide by 2 feet deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of Buena Vista and Kern Lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to more than 22,000 square miles. Miller and Lux's impact extended beyond Kern County. They recognized early on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, more than 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (Appendix E).

The San Joaquin Valley was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift in the region as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley toward oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of a great number of migrants from the drought-affected Dust Bowl region looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in towns such as Bakersfield, where their descendants live today (Boyd 1997).

Existing Cultural Resources

Methods Used to Identify Known Cultural Resources

The project's cultural resources report evaluates potential effects on significant cultural resources and included an archival records search, an on-foot pedestrian survey, and a Sacred Lands File (SLF) search conducted by the California Native American Heritage Commission (NAHC). The methodology and results of the assessment are summarized below and are described in detail in Appendix E of this EIR.

Southern San Joaquin Valley Information Center Records Search

To determine whether the study area had been previously surveyed for cultural resources and/or whether any such resources were known to exist within or near the study area, an archival records search was conducted in conjunction with the Southern San Joaquin Valley Information Center on December 2, 2019. The records search was completed to determine if prehistoric or historical archaeological sites had previously been recorded within the study area, if the study area had been systematically surveyed by archaeologists prior to the initiation of this field study, and/or whether the region of the project was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the National Register of Historic Places (NRHP), the Historic Property Data File, the California Register of Historical Resources (CRHR), and the California Points of Historic Interest. The records search included the study area and a 0.5-mile buffer.

According to the Southern San Joaquin Valley Information Center records search, 26 previous surveys had covered portions of the study area (Table 4.5-1, *Survey Reports Within the Study Area*), and an additional 14 previous surveys had been completed within 0.5 miles of the study area (Table 4.5-2, *Survey Reports Within 0.5 Miles of the Study Area*). No previously recorded resources of any kind are known to exist within the study area, although eight previously recorded resources are known to exist within 0.5 miles of the study area (Table 4.5-3, *Resources within 0.5 Miles of the Study Area*).

TABLE 4.5-1: SURVEY REPORTS WITHIN THE STUDY AREA

Report No.	Year	Author(s)/Affiliation	Title
KE-00033	1994	Osborne, Richard/California Department of Transportation	Negative Archaeological Survey Report. Highway Project Description: District 06, Kern County, Route 99, Post Mile 5.34, Charge Unit 169, Expenditure Authorization 37620K
KE-00034	1994	Osborne, Richard, and Rudy Chavez/California Department of Transportation	Negative Archaeological Survey Report. Highway project description: District 06, Kern County, Route 99, Post Mile 10.93, Charge Unit 169, Expenditure Authorization 37620K
KE-00046	1995	Osborne, Richard/Center for Archaeological Research, California State University, Bakersfield	Archaeological Survey Report for Proposed Seismic Retrofitting of Bridge Number 50-0348 Herring Road Overcrossing
KE-00053	1994	Osborne, Richard, and Rudy Chavez	Negative Archaeological Survey Report. Highway Project Description: District 06, Kern County, Route 5, Post Mile 19.61, Charge Unit 169, Expenditure Authorization 37620K

TABLE 4.5-1: SURVEY REPORTS WITHIN THE STUDY AREA

Report No.	Year	Author(s)/Affiliation	Title
KE-00055	1994	Osborne, Richard, and Rudy Chavez	Negative Archaeological Survey Report. Highway Project Description: District 06, Kern County, Route 5, Post Mile 21.17, Charge Unit 169, Expenditure Authorization 37620K
KE-00056	1994	Osborne, Richard, and Rudy Chavez	Negative Archaeological Survey Report. Highway Project Description: District 06, Kern County, Route 5, Post Mile 22.88, Charge Unit 169, Expenditure Authorization 37620K
KE-00172	1989	BioSystems Analysis Inc.	Technical report of cultural resources studies for the proposed WTG- West, Inc. Los Angeles to San Francisco and Sacramento, California Fiber Optic Cable Project
KE-00320	1978	Chavez, David/URS Company	FINAL: Cultural Resources Evaluation for the Naval Petroleum Reserve No. 1 (Elk Hills) to Rialto Crude Oil Pipeline, Kern County, California
KE-01025	1996	Roper, Kristina C. and Michael J. Moratto/Applied EarthWorks Inc.	Preliminary Cultural Resources Study for the Proposed MWD Water Transfer Facilities Project, Kern County, California
KE-01028	1996	Science Applications International Corporation, Environmental Programs Division	Cultural Resources Investigation Pacific Pipeline Emidio Route (Including West Liebre Gulch Ridge Alignment and Mojave Alternatives) L.A. and Kern Counties, CA
KE-02126	1998	Laylander, Don/California Department of Transportation	Negative Archaeological Survey Report: 06-KER-99, PM 7.3/9.3
KE-02127	1993	Blair, Lynda/Harry Reid Center for Environmental Studies, Barrick Museum of Natural History, UNLV	Final Report: Westside Loop Kern River Gas Transmission Company, Kern County, CA
KE-02172	1998	Laylander, Don/California Department of Transportation	Negative Archaeological Survey Report: 06-KER-99, PM 0.0/9.0
KE-03239	2002	Underwood, Jackson, and James H. Cleland/EDAW Inc.	Cultural Resources Survey of Line 1903, All American Pipeline Conversion Project from Mettler, Kern County, CA to Daggett, San Bernardino County, California
KE-03528	2006	Arrington, Cindy, Bryon Bass, Joan Brown, Chris Corey, and Kevin Hunt/SWCA Environmental Consultants	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California
KE-03777	2010	Palm-Leach, Laura, Paul Brandy, Jay King, Pat Mikkelsen, Libby Seil, Lindsay Hartman, Jill Bradeen, Bryan Larson, Joseph Freeman, Julia Costello, Jeffrey Rosenthal, and Deborah Jones/ Far Western Anthropological Research Group Inc.	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties Summary of Methods and Findings
KE-03894	2009	Miller, Michelle A./California Department of Transportation	Historic Property Survey Report for Valpredo Shoulder Regrade Project on State Route 99, in Kern County
KE-03894A	2009	Miller, Michelle A./California Department of Transportation	Negative Archaeological Survey Report for 06-KER-99-3.9/10.4 Valpredo Shoulder Regrade

TABLE 4.5-1: SURVEY REPORTS WITHIN THE STUDY AREA

Report No.	Year	Author(s)/Affiliation	Title
KE-03983	2010	Armstrong, Matthew, Kelly Larsen, and Thomas Jackson/Pacific Legacy Inc.	Cultural Resources Inventory of the Maricopa Solar Project, Kern County, California
KE-04208	2009	Nettles, Wendy M./California Department of Transportation	Historic Property Survey Report, Kern Overlay Project, Kern County, California
KE-04245	2010	Whitaker, Adrian/Far Western Anthropological Research Group Inc.	Lakeview-Andrews Parcel Solar PV Project - Records Search Report
KE-04294	2011	Holm, Lisa/Pacific Legacy Inc.	Archaeology Survey Report for the Adobe Solar Project, Kern County, California
KE-04295	2011	Holm, Lisa/Pacific Legacy Inc.	Archaeological Survey Report for the Rigel Solar Project, Kern County, California.
KE-04297	2009	Carpenter, Kim/Far Western Anthropological Research Group Inc.	Cultural Resource Sensitivity Report for the Cawley Lakeview Solar PV Project.
KE-04509	2014	Harvey, Victoria/Cogstone Resource Management Inc.	Cultural Resources Records Search and Site Visit for Buoni North CA CLV0630, ATC Site No. 280734, 9703 Copus Road, Mettler, Kern County, California
KE-04796	2014	Laurie, Leroy, and Andrew Pulcheon/LSA Associates	Archaeological Survey Report for the Old River Road Improvement Project from State Route 166 to State Route 119, Kern County, California
KE-04884	2017	Roper, C. Kristina/Far Western Anthropological Research Group Inc.	Historic Resources Compliance Report Interstate 5 Vehicle Detection Systems at 21 Locations in Kern County, California
KE-04884A	2017	Roper, C. Kristina/Far Western Anthropological Research Group Inc.	Archaeological Survey Report Interstate 5 Vehicle Detection Systems at 21 Locations in Kern County, California

TABLE 4.5-2: SURVEY REPORTS WITHIN 0.5 MILES OF THE STUDY AREA

Report No.	Year	Author (s)/Affiliation	Title
KE-00457	1992	Glover, Leslie C., and Eric Wohlgemuth/Far Western Anthropological Research Group Inc.	A cultural resources inventory of the Socal Meter Station in Kern County, California
KE-00964	1988	Pruett, Catherine Lewis, and Karen Acker/Cultural Resource Facility, California State University, Bakersfield	Environmental Impact Evaluation: An Archaeological Survey of a Portion of Section 31, T. 31 S, R. 28 E, Located at Union Avenue and Highway 99
KE-01185	1922	Gifford, E.W.	Concerning Mounds Tentatively Examined by Arling Steinberger of McFarland, California
KE-01772	1984	Cheryl Casdorph, Edward B. Weil, Jill Weisbord, and E.R. Blakley/Applied Conservation Technology Inc.	Cultural Resources Literature Search, Records Check and Sample Field Survey for the California Portion of the Celeron/All American Pipeline Project
KE-02649	2000	Reisig, Mark R./ Environmental Data Resources Inc.	Nextel Communications ESMR Antenna Site CA 1679D - Sandrini
KE-02726	2002	Martin, Leigh/William Self Associates Inc.	Cultural Resources Assessment Report Proposed Nationwide Differential Global Positioning System

TABLE 4.5-2: SURVEY REPORTS WITHIN 0.5 MILES OF THE STUDY AREA

Report No.	Year	Author (s)/Affiliation	Title
			(NDGPS) Masts Bakersfield, Kern County, California
KE-02804	2002	Mellon, Knox/Department of Parks and Recreation	HRDO-04 (J. Arnold) [Section 106 Consultation on the Conversion of a US Air Force Gwen Facility into a NDGPS Reference Station, Kern County]
KE-02805	2002	Martin, Leigh/William Self Associates Inc.	Cultural Resources Assessment Report Proposed Nationwide Differential Global Positioning System (NDGPS) Masts Bakersfield, Kern County, California
KE-03157	2005	Billat, Lorna/EarthTouch Inc.	FCC Form 620 (Section 106) Submittal NX-CA-3230F/ Lakeview Near Bakersfield
KE-03319	2006	Hudlow, Scott/Hudlow Cultural Resource Associates	A Phase I Cultural Resource Survey for Eddie Mulligan, Rodeo Grounds Project Kern County, CA
KE-03347	2004	Bonner, Wayne H./Michael Brandman Associates	Records Search Results and Site Visit for Cingular Wireless Facility Candidate VY-683-01 (Stine Road and Hwy 119) 9500 Wible Road, Bakersfield, Kern County, California
KE-03995	2010	Fulton, Phil/LSA Associates Inc.	Purchase Order No. 4500155911, CWA No. 82; Cultural Resources Study of the EMT Upgrades Project for 32 Towers on the Midway-Vincent No. 1, Midway-Vincent No. 2, and Midway-Vincent No. 3 Transmission Lines in the Counties of Kern and Los Angeles, California
KE-04609	2013	Brunzell, David/ BCR Consulting LLC	Cultural Resources Assessment of Century Exploration Rio Viejo Oil and Gas Exploration Project, Unincorporated Kern County, California
KE-04670	2015	Deveraux, Alison/Transcon Environmental	Cultural Resources Constraints Report for PG&E's Wheeler Ridge 1103 - Bakersfield Pole Replacement Project, Kern County, California

TABLE 4.5-3: RESOURCES WITHIN 0.5 MILES OF THE STUDY AREA

Primary #	Type	Age	Description
P-15-000030/ CA-KER-30	Site	Prehistoric, unknown	Circular mound
P-15-000031/ CA-KER-31	Site	Prehistoric	Elliptical mound
P-15-000051/ CA-KER-51	Site, Element of District	Prehistoric, Protohistoric	Twined-bag fragments, burials
P-15-000062/ CA-KER-62	Element of District	Prehistoric	Unknown
P-15-000243/ CA-KER-243	Site	Prehistoric	Midden and scattered shell
P-15-002244/ CA-KER-2244	Site	Prehistoric	Lithe scatter
P-15-011530	Building, Structure, Element of District	Historic	Rossini Farms Company Vineyard
P-15-013858	Site	Historic	Refuse scatter

Sacred Lands File Search

The NAHC maintains a confidential SLF that contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted to request a search of its SLF, and a response was provided on December 3, 2019. The results of the SLF search conducted by the NAHC indicated that Native American cultural resources are not known to be located within or near the project site.

Review of Historical Maps

Historical maps that included the study area were consulted to identify potential historical structures or resources. With the exception of Block 2 and Block 5 of the study area, as defined in the technical cultural resources report (see Appendix E), no structures appear in the vicinity of the study area on any historical U.S. Geological Survey (USGS) 1:24000 topographic quadrangles. No structures appear in Block 2 until the 1956 edition of the 1955 Coal Oil Canyon USGS 1:24000 topographic quadrangle, when the Lakeview Duck Club first appears within the northeast quarter of Section 32 (T32S/R27E; MDBM) and the northwest quarter of Section 33 (T32S/R27E; MDBM). The 1970 and 1976 editions of the 1955 Coal Oil Canyon USGS 1:24000 topographic quadrangle indicate additional structures were present in the southwest quarter of Section 33 (T32S/R27E; MDBM) and the northeast quarter of Section 32 (T32S/R27E; MDBM). Structures first appear in Block 5 on the 1956 edition of the 1955 Mettler USGS 1:24000 topographic quadrangle along the east edge of the southwest quarter and the west edge of northwest quarter of Section 34 (T32S/R28E; MDBM). All structures are no longer present within the block on the 1995 edition of the 1992 Mettler USGS 1:24000 topographic quadrangle (Appendix E).

Site Sensitivity Model

A site sensitivity model designed for this portion of the San Joaquin Valley determined that most of the study area west of Interstate 5 has a low probability for archaeological sites, and those portions of the study area east of Interstate 5 have a moderate probability for archaeological sites (ASM Affiliates 2015). Ethnographic accounts indicate that the principal historic village for the Hometwoli (or Yauelamni) Yokuts was Pohalin Tinliu, located on the south shore of Kern Lake. This has not been relocated, but it is believed most likely to be the concentration of sites CA-KER-30, 31, and 62, portions of which were at one point on elevated ground along the southern lake edge.

Cultural Resources Survey

A Class III inventory/Phase I survey of the Sandrini Solar Project study area was conducted in January, February, and April 2020 by ASM Affiliates archaeologists, the complete results of which are contained within Appendix E. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars and historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording following the California Office of Historic Preservation Instructions for Recording Historic Resources and the Bureau of Land Management 8100 Manual, using California Department of Recreation DPR 523 forms. Parallel survey transects spaced 15 meters apart were employed for the inventory.

The study area consisted of approximately 3,422 acres of active and fallow agricultural fields (devoid of any native vegetation), graded agricultural dirt roads, existing County rights-of-way, and existing water facilities. Visibility within the study area ranged from 50% to 100%. Two prehistoric isolates were identified within the study area during the inventory. These were given the temporary designations of SANDRINI-ISO-1 and SANDRINI-ISO-2. SANDRINI-ISO-1 consists of a single flake that was identified in the northern portion of Block 2 just east of an existing agricultural facility. SANDRINI-ISO-2 consists of a charm stone that was identified near the northwest corner of Block 6. No other cultural resources of any kind were identified during the survey, reflecting the previous site sensitivity model for this portion of the southern San Joaquin Valley, which forecast low to medium likelihood for sites (ASM Affiliates 2015).

SANDRINI-ISO-1 (Temporary Designation)

This isolate consists of a single crypto-crystalline secondary interior flake with no cortex. The flake measures 1.5 by 1.4 by 0.3 centimeters. The isolate is in good condition.

SANDRINI-ISO-2 (Temporary Designation)

This isolate consists of a simple unperforated sandstone plummet-shaped charm stone. It measures 12 centimeters long by 3.6 centimeters in diameter (spindle neck width: 1.2 centimeters; plummet end: 1.3 centimeters). The isolate displays multiple scrapes and breaks likely cause by repeated disking. It is in fair condition.

Charm stones are relatively common in the San Joaquin Valley archaeological record, with a number of caches found around waterways (e.g., Sutton 1996; O'Neil 2018). The caches in particular are sometimes associated with burials (e.g., Van Buren and Wiberg 2011). Individual examples, however, are often found along lakeshores. Latta notes (1977:639) the following:

> *Charm stones have been found throughout Yokuts territory. Along streams and about the shores of valley lakes, they have been discovered in great numbers. Away from old bodies of water they have been brought to the surface by plowing. During the late [18]80s and early [18]90s, when the waters of Tulare Lake began to recede, these stones were found by the hundreds along the lower shores. Dr. Ed Smith of Hanford made a large collection of the ones found along those shorelines and in the lowest portion of the dry lake-bed. He told me during one week-end, traveling with horse and buggy along the receding shore of Tulare Lake, he gathered 184 Yokut's rainmaker's charm stones.*

As suggested by Latta (1977:639), charm stones were associated with rain making, but also with ensuring fishing and hunting luck more generally (Sharp 2000). As ritual objects containing supernatural power, charm stones had to "killed" by having their potency nullified after use (O'Neil 2018). Immersion in water was a standard practice for such purposes in Native California, perhaps explaining the apparent frequency of these types of ritual artifacts found along old lake shorelines. Regardless of specific use, the isolated charm stone was most likely used for ceremonial purposes.

Native American Correspondence and Assembly Bill 52 Consultation

As part of the project's cultural resources report (Appendix E), an SLF search through the NAHC was conducted. The NAHC maintains a confidential SLF that contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on June 3, 2021, to request a search of its SLF. The NAHC responded to the request in a letter dated June 24, 2021. The results of the SLF search conducted by the

NAHC indicated that Native American cultural resources are not known to be located within or near the project site. The search yielded a tribal contact list to be used for AB 52 tribal consultation.

As part of the County's government-to-government responsibilities pursuant to AB 52, on June 3, 2021, 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. Similarly, as part of the County's government-to-government consultation responsibilities pursuant to SB 18, on June 25, 2021, the County sent outreach letters via certified mail to 11 California Native American tribal contacts identified by the NAHC. Results of the outreach are shown in Table 4.16-1, *AB 52 and SB 18 Native American Consultation*, in Section 4.16, *Tribal Cultural Resources*, of this EIR. To date, the County has received two responses, one from the San Manuel Band of Mission Indians (SMBMI) and one from the Santa Inez Band of Chumash Indians. In an email correspondence dated June 14, 2021, a representative of the San Manuel Band of Mission Indians (Ryan Nordness) acknowledged the delivery of the notice and stated that, "The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates." In an email correspondence dated August 17, 2021, a representative of the Santa Ynez Band of Chumash Indians (Kelsie Merrick) acknowledged delivery of the notice and stated that, "At this time, the Elders' Council requests no further consultation on this project; however, if supplementary literature reveals additional information, or if the scope of the work changes, we kindly ask to be notified" and that "If you decide to have the presence of a Native American monitor in place during ground disturbance to assure that any cultural items unearthed be identified as quickly as possible, please contact our office or Chumash of the project area."

the County's government-to-government consultation efforts with interested Native American groups conducted pursuant to AB 52 and SB 18 did not result in the identification of tribal cultural resources within the project site.

4.5.3 Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended (16 USC 470f), and its implementing regulations—Protection of Historic Properties (36 CFR Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979—legislates the protection of archaeological resources. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the NRHP. As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the NRHP. Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria in 36 Code of Federal Regulations (CFR) 60.4.

National Register of Historic Places

The NRHP was established by the NHPA as "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The NRHP recognizes historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria established by the U.S. Department of the Interior:

a. Are associated with events that have made a significant contribution to the broad patterns of our history;

b. Are associated with the lives of persons significant in our past;

c. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing. In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance." The NRHP recognizes seven qualities that, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

State

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR 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 NRHP, and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. 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 CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on the NRHP 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 5024.1, Title 14 California Code of Regulations [CCR], Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. 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 CRHR 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 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 California Historical Landmark (CHL) No. 770. CHLs No. 770 and above are automatically listed in the CRHR.

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 Points of Historical Interest 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. California Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR. No historical resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation is 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 California Point of Historical Interest, 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 (PRC Section 21084.1), a project that may cause a substantial adverse change in the significance of a 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 a historical resource includes (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR; 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/or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California 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 a historical resource as defined in PRC Section 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC 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 a historical resource would be materially impaired) in the significance of a historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (CEQA Guidelines Sections 15064.5[b][1] and 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 PRC 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 PRC Section 21083.2, then the site is to be treated in accordance with the provisions of PRC 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 (PRC Section 21083.2[b]). If preservation in place is not feasible, mitigation measures are required.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on those resources are not considered a significant effect on the environment (CEQA Guidelines Section 15064.5[c][4]).

Native American Heritage Commission

PRC Section 5097.91 established the 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

Sections 6254(r) and 6254.10 of the California Public Records Act 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 Native American Grave Protection and Repatriation Act of 2001

Codified in California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection and Repatriation Act (NAGPRA) is consistent with the federal NAGPRA. Intended to "provide a seamless and consistent state policy to ensure that all California Indian human remains and cultural items be treated with dignity and respect," the California NAGPRA also encourages and provides a mechanism for the return of remains and cultural items to lineal descendants. Section 8025 established a Repatriation Oversight Commission to oversee this process. The California NAGPRA also provides a process for non-federally recognized tribes to file claims with agencies and museums for repatriation of human remains and cultural items.

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.

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 (County of Kern 2009). 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

Policies

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 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

The project's potential impacts to cultural resources were evaluated using a variety of sources. The analysis in this section is supported by the cultural resources technical report and associated technical report addendum dated April 28, 2021, both of which are provided in Appendix E of this EIR. To evaluate the project's potential effects on significant archaeological and historic built environment resources, the report includes a records search, an SLF search, and a cultural resources pedestrian survey (Appendix E). The report also summarizes results of Native American consultation conducted by County staff in accordance with AB 52. Based on these data, impacts were analyzed according to the CEQA significance criteria described below.

Thresholds of Significance

The following criteria, as established in CEQA Guidelines Appendix G, were used to determine if the 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 under the subheading *Project Impacts*. Impacts to tribal cultural resources are 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 records search conducted for the project identified no previously recorded historical resources within project site boundaries. The records search was also extended to a 0.5-mile radius around the project site, which resulted in the recording of eight off-site resources within that radius. Those off-site resources are identified in Table 4.5-3, *Resources within 0.5 Miles of the Study Area* and include a circular mound, elliptical mound, twined-bag fragments/burials, midden and scattered shell, lithe scatter, Rossini Farms Company Inc. Vineyard, and refuse scatter. A cultural resource pedestrian survey was also conducted within the project site and resulted in the finding of two isolated artifacts: SANDRINI-ISO-1 (an isolated flake) and SANDRINI-ISO-2 (an isolated charm stone). Per the cultural resources report, neither of these resources are considered significant or unique historical resources under CEQA, they are not categorically eligible for NRHP/CRHR listing, and they do not represent a significant or unique historical resource under CEQA (Appendix E). These resources are further described in detail in under the subheading *Existing Cultural Resources*.

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. 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. Therefore, the project has the potential to cause a substantial change in the significance of a historical resource, and a qualified archaeologist should be retained by the project and an Inadvertent Discovery Plan should be prepared to ensure that any unanticipated cultural resources discovered during construction and operation of the project are appropriately treated. Implementation of Mitigation Measure (MM) 4.5-1 through MM 4.5-3 would reduce potential impacts to unrecorded archeological resources to a less-than-significant level.

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 Professional Qualifications Standards within its Standards and Guidelines, to carry out all mitigation measures related to archaeological and unique historical resources. The contact information for the 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 that the following employee training provisions occur 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 conduct cultural resources sensitivity training for all personnel working on the project site. A Cultural Resources Sensitivity Training Guide, approved by the lead archaeologist, shall be provided to all personnel. The training guide may be presented in video form. A copy of the proposed training materials shall be provided to the Kern County Planning and Natural Resources Department prior to the issuance of any grading or building permit.

   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 and/or Native American monitor(s) for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.

b. The project proponent/operator shall ensure all employees or on-site workers who have not participated in earlier cultural resources sensitivity trainings shall meet the provisions specified above.

c. A copy of the Cultural Resources Sensitivity Training Guide/materials shall be kept on site and be available for all personnel to review and be familiar with, as necessary. It is the responsibility of the lead archaeologist to ensure that all employees receive appropriate training before working on site.

MM 4.5-2: Prior to the issuance of any grading or building permit, the project operator shall submit to the Kern County Planning and Natural Resources Department a Cultural Resources Treatment Plan. The plan shall do the following:

a. Provide an overview of best management practices to be used during construction activities to ensure protection of cultural resources.

b. Outline the process for evaluation of any unanticipated cultural discoveries during project construction activities.

MM 4.5-3: 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 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.

Level of Significance after Mitigation

Impacts would be less than significant.

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 for Impact 4.5-1, there is the potential for the project to impact unknown, subsurface archaeological resources. Although the project's cultural resource report has identified the project site as having a low to moderate archaeological sensitivity (Appendix E), 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 through MM 4.5-3, which require cultural resources sensitivity training for construction workers, archaeological monitoring during construction, and appropriate treatment of unearthed archaeological resources during construction, potential impacts would be reduced to less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.5-3: The project would disturb 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 4.5-4 would ensure that any human remains encountered during project implementation are properly treated, thus reducing impacts to a less-than-significant level.

Mitigation Measures

Implementation of the following mitigation measures would reduce Impact 4.5-3.

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 Section 15064.5(e)(1) of the California Environmental Quality Act Guidelines. 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(c) and California Public Resources Code (PRC) 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a most likely descendent for the remains, per PRC 5097.98. Per PRC 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 (7100 et seq.) directing identification of the next-of-kin shall apply.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts of a project. Cumulative impacts and projects are discussed in Chapter 3, *Project Description*, of this EIR. The geographic area of analysis of cumulative impacts for cultural resources includes the southern San Joaquin Valley, which includes the southeast portion Kern County, where the project site is located. 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 uses, and thus, site types. Further, 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 are proposed throughout Kern County and the southern San Joaquin Valley, including solar facilities, agricultural trucking facilities, telecommunication infrastructure, and commercial development. Cumulative impacts to cultural resources in the southern San Joaquin Valley could occur if other projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, when considered together, would be significant.

Development of the proposed 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. MM 5.4-3 requires archaeological and Native American representative monitoring to ensure that any currently unknown archeological resources that qualify as historical resources or unique archaeological resources are identified during construction, and appropriate treatment of uncovered archaeological resources is implemented. Implementation of these mitigation measures would reduce the proposed 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. Although project construction has the potential to disturb human remains, as do other projects in the cumulative study area, implementation of MM 4.5-4 would ensure that appropriate laws and protocols are followed with regard to identifying and handling remains, and would also ensure that cumulative impacts 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 southern 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.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-4.

Level of Significance after Mitigation

Impacts would be less than significant.

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4.6 Energy

4.6.1 Introduction

This section describes the existing energy conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project.

Appendix F of the California Environmental Quality Act Guidelines requires that Environmental Impact Reports (EIRs) discuss the potential energy impacts of projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy to ensure that energy implications are considered in project-related decision-making processes. As such, this section analyzes the energy impacts of the proposed project. Specifically, this section summarizes the existing conditions on the project site, discusses the regulatory framework, and discloses estimated energy use during construction and operation of the project. This analysis considers the electricity, natural gas, and transportation fuel (petroleum) demands of the project, as well as potential service delivery impacts.

Information in this section is based on the Energy Utilization Analysis (EUA), prepared by Dudek (Appendix F of this EIR) for the project. The EUA is primarily based on the greenhouse gas (GHG) emissions calculations provided in the Air Quality Impact Analysis (Insight Environmental/Trinity Consultants 2021, located in Appendix C of this EIR) for this project.

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, the potential to generate, is typically rated in megawatts (MW), which is 1 million watts, while energy usage is measured with a time component, typically in megawatt-hours (MWh) or gigawatt-hours (GWh), which is 1 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.

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).

According to the U.S. Energy Information Administration, California used approximately 2,154,030 million cubic feet of natural gas in 2019 (EIA 2020c). Natural gas is used for cooking, space heating, generating electricity, and as an alternative transportation fuel. The majority of California's natural gas customers are residential and small commercial customers (core customers), which accounted for approximately 35% of the natural gas delivered by California utilities in 2018 (CPUC 2020). Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 65% of the natural gas delivered by California utilities (CPUC 2020). The CPUC regulates California natural gas rates and natural gas services, including in-state transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. Biogas (e.g., from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the state has been encouraging its development (CPUC 2020). In 2019, PG&E delivered approximately 4.9 billion therms of natural gas to the region, with 3 billion therms for non-residential use and 1.9 billion therms for residential use (CEC 2020b 2020c).

Petroleum

According to the U.S. Energy Information Administration, California used approximately 681 million barrels of petroleum in 2018, with the majority (584 million barrels) used for the transportation sector (EIA 2020d). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 78.4 million gallons of petroleum per day, adding up to an annual consumption of 28.7 billion gallons of petroleum. By sector, transportation uses utilize approximately 85.5% of the state's petroleum, followed by 11.1% from industrial, 2.5% from commercial, 0.9% from residential, and 0.01% from electric power uses (EIA 2020d). Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation. As such, the CEC anticipates an overall decrease of gasoline demand in the state over the next decade (CEC 2018a). According to CARB's EMFAC2021, the County is anticipated to use 747 million gallons of petroleum from onroad sources and 36 million gallons of petroleum from offroad sources in 2021 (CARB 2021).

Transportation

California used approximately 19.7 billion gallons of petroleum in 2019 (EIA, 2020d). By sector, transportation uses utilize approximately 85.3 percent of the state's petroleum, followed by 10.9 percent from industrial, 2.6 percent from commercial, 1.0 percent from residential, and 0.01 percent from electric power uses (EIA, 2020d). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation. 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 (VMT) (CEC, 2016a). The California Energy Commission (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, 2016b). According to the California Air Resources Board's (CARB) EMFAC2017 Web Database that estimates the emissions inventory of on-road mobile sources in California, Kern County on-road transportation sources consumed approximately 454 million gallons of gasoline and 308 million gallons of diesel fuel in 2018 (CARB 2019).

4.6.3 Regulatory Setting

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. 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.

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 (NHTSA, 2019). 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 (USEPA and NHTSA 2016).

Energy Independence and Security Act of 2007

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

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; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code Section 25301(a)). The California Energy Commission's Integrated Energy Policy Report, undated annually, 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, an update on trends in California's sources of crude oil, an update on California's nuclear plants, and other energy issues.

California Assembly Bill 1493 (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's CO_2 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 (CARB, 2017). 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, 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

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines 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 2011). To improve air quality, CARB proposed new emissions standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that by 2025, cars will emit 75% less smog-forming pollution than the average new car sold in 2011 (CARB 2011). To reduce GHG emissions, CARB,

in conjunction with the EPA and the NHTSA, adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025 (EPA and NHTSA 2012). The zero-emissions vehicles (ZEVs) program acts 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 the 2018 through 2025 model years. The Clean Fuels Outlet regulation ensures that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

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 5 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 nitrogen oxides (NO_X) and particulate matter (PM10 and PM2.5) 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 (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB 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.

Warren–Alquist Act

The California Legislature passed the Warren–Alquist Act in 1974, which created the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for buildings constructed and appliances sold in California.

- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high-demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure the provision of adequate, reliable, and reasonably priced electrical power and natural gas supplies; it also identified cost-effective and environmentally sound energy policies, strategies, and actions for California's consumers and taxpayers. In 2005, the CEC and CPUC adopted a second Energy Action Plan to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an "update" that examines the state's ongoing actions in the context of global climate change.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted Senate Bill (SB) 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, the California Air Resources Board (CARB) prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focus on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations (CCR) was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies.

The current Title 24, Part 6 standards, referred to as the 2019 Title 24 Building Energy Efficiency Standards, became effective on January 1, 2020. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards use approximately 53% less energy than those under the 2016 standards (CEC 2018b). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018b).

Title 24 also includes Part 11, the California Green Building Standards (CALGreen). CALGreen establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, electric vehicle charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, and excavated soil and land clearing debris (24 CCR Part 11).

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 (Perata, Chapter 598, Statutes of 2006):

- Establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities of 1,100 pounds carbon dioxide (CO_2) 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.

Assembly Bill 1493

Adopted in 2002 by the state legislature, AB 1493 ("Pavley" regulations) required that CARB develop and adopt, no later than January 1, 2005, regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles.

The first California request to implement GHG standards for passenger vehicles, known as a waiver request, was made in December 2005 and was denied by the EPA in March 2008. That decision was based on a finding that California's request to reduce GHG emissions from passenger vehicles did not meet the Clean Air Act requirement of showing that the waiver was needed to meet "compelling and extraordinary conditions."

The EPA granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On September 24, 2009, CARB adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. These amendments were part of California's commitment to a nationwide program to reduce new passenger vehicle GHGs from by 2016. CARB's September 2009 amendments allowed for California's enforcement of the Pavley rule while providing vehicle manufacturers with new compliance flexibility. The amendments also prepared California to harmonize its rules with the federal rules for passenger vehicles. It was expected that the Pavley regulations would reduce GHG emissions from California passenger vehicles by approximately 22% by 2012 and approximately 30% by 2016 while improving fuel efficiency and reducing motorists' costs.

Executive Order S-1-07

Issued on January 18, 2007, Executive Order S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO2-equivalent (CO2e) grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard was to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation was expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste. In addition, the Low Carbon Fuel Standard was expected to drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles. The Low Carbon Fuel Standard was anticipated to lead to the replacement of 20% of the fuel used in motor vehicles with alternative fuels by 2020.

Senate Bill 375

SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035 and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plans (RTPs) that will achieve the GHG reduction targets set by CARB. If a metropolitan planning organization is unable to devise an SCS to achieve the GHG reduction target, the metropolitan planning organization must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), an SCS does not regulate the use of land; supersede the land use authority of cities and counties; or require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In September 2010, CARB adopted the first SB 375 targets for the regional metropolitan planning organizations. The targets for the Kern Council of Governments (KCOG) were a 5% reduction in emissions per capita by 2020 and a 10% reduction by 2035 of the 2005 baseline. Achieving these goals through adoption of an SCS is the responsibility of the metropolitan planning organizations. On August 16, 2018, the KCOG Board adopted the 2018 RTP/SCS, which built on the progress made in the 2014 RTP/SCS (KCOG 2018). The KCOG is currently developing the 2022 RTP/SCS.

Truck and Bus Regulation, On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

On December 12, 2008, CARB approved the Truck and Bus Regulation to significantly reduce particulate matter (PM) and oxides of nitrogen (NO_x) emissions from existing diesel vehicles operating in California. Amendments to this regulation were approved by CARB on April 25, 2014.

The regulation applies to nearly all diesel-fueled, dual-fueled, or alternative-diesel-fueled trucks and buses with a gross vehicle weight rating greater than 14,000 pounds that are privately or federally owned, and for

privately and publicly owned school buses. The purpose of this regulation is to reduce emissions of diesel PM, NO_x, and other criteria pollutants from in-use diesel-fueled vehicles.

Heavier trucks and buses with a gross vehicle weight rating greater than 26,000 pounds must comply with a schedule by engine model year or owners can report to show compliance with more flexible options. Starting January 1, 2012, heavier trucks were required to meet a particular engine model year schedule. Fleets that comply with the schedule must install the best available PM filter on 1996 model year and newer engines and replace the vehicle 8 years later. Trucks with 1995 model year and older engines must be replaced starting in 2015. Replacements with a 2010 model year or newer engines meet the final requirements, but owners can also replace with used trucks that have a future compliance date on the schedule. For example, a replacement with a 2007 model year engine complies until 2023. By 2023, all trucks and buses must have 2010 model year engines, with few exceptions. No reporting is required if complying with this schedule (CARB 2014).

Executive Order B-16-12

Governor Brown issued Executive Order S-16-12 on March 23, 2012. The executive order requires that state entities under the governor's direction and control support and facilitate the rapid commercialization of ZEVs. It orders CARB, the CEC, the CPUC, and other relevant agencies work with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve the following by 2015:

- The state's major metropolitan areas will be able to accommodate ZEVs, each with infrastructure plans and streamlined permitting
- The state's manufacturing sector will be expanding ZEV and component manufacturing
- The private sector's investment in ZEV infrastructure will be growing
- The state's academic and research institutions will be contributing to ZEV research, innovation, and education

CARB, the CEC, and the CPUC, were also directed to establish benchmarks to help achieve the following goals by 2020:

- The state's ZEV infrastructure will be able to support up to 1 million ZEVs
- The costs of ZEV will be competitive with conventional combustion vehicles
- ZEVs will be accessible to mainstream consumers
- There will be widespread use of ZEVs for public transportation and freight transport
- Transportation sector GHG emissions will be falling as a result of the switch to ZEVs
- Electric vehicle charging will be integrated into the electricity grid
- The private sector's role in the supply chain for ZEV component development and manufacturing will be expanding

Benchmarks were also established to help achieve the following goals by 2025:

- Over 1.5 million ZEVs will be on California roads and their market share will be expanding
- Californians will have easy access to ZEV infrastructure

- The ZEV industry will be a strong and sustainable part of California's economy
- California's clean, efficient vehicles will annually displace at least 1.5 billion gallons of petroleum fuels

On a statewide basis, the executive order establishes a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050.

Cap-and-Trade Program

To 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 electricity generated in and imported into California, large combustion sources (i.e., generally those emitting more than 25,000 metric tons [MT] of CO_2e 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."

Renewable Energy Sources

SB 1078 established the California Renewables Portfolio Standard (RPS) program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. SB 1078 relatedly required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) required all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 set a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% had to come from renewables.

SB 350 (2015) expanded the RPS because it requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024; 52% by December 31, 2027; and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. SB 100 requires that the achievement of 100%

zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid, and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60% RPS by 2030. Therefore, any project's reliance on non-renewable energy sources would also be reduced.

The CEC and California Public Utilities Commission (CPUC) share responsibility for overseeing the implementation of California's RPS program. The CEC administers the program for publicly owned utilities. Similarly, the CPUC administers the RPS programs for the investor owned utilities, like SCE. 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. Refer to Section 4.8, *Greenhouse Gas Emissions*, of this EIR for additional details regarding this regulation.

Assembly Bill 1007 (2005)

AB 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with CARB and in consultation with other state agencies, plus federal and local agencies. The State Alternative Fuels Plan assessed various alternative fuels, and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

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. *CEQA Guidelines* Appendix F 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, natural gas, 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 Utilization Analysis for the Sandrini Solar Project* (Dudek 2021) prepared for the project. A full copy of the report is provided in Appendix F of this EIR.

Construction

Electricity

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). Although electrical service will be established to serve construction, the amount of electricity that will be used is likely to be small. Temporary electric power for as-necessary lighting and electronic equipment, such as computers inside temporary construction trailers, would be provided by PG&E.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection.

Petroleum

Potential impacts were assessed through projected traffic trip generation during construction as provided by the CalEEMod and CARB EMFAC 2017 outputs in the Air Quality Impact Analysis (Insight Environmental/Trinity Consultants 2021) for the project. Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton of CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton of CO_2 per gallon (The Climate Registry 2021). Heavy-duty construction equipment associated with construction activities and vendor trucks were assumed to use diesel fuel. It was assumed that construction workers would travel to and from the project site in gasoline-powered vehicles. Fuel consumption from worker and vendor trips was estimated by converting the total CO_2 emissions from the construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The fuel consumption resulting from the project's operational phase would be attributable to vehicles traveling to and from the project site. Similar to construction worker and vendor trips, fuel consumption for operation was estimated by converting the total CO_2 emissions from the project to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel.

Operation

Electricity

The operational phase would require electricity for multiple purposes, including building heating and cooling, lighting, electronics, and electric pump. CalEEMod was used to estimate project emissions from electricity uses (Insight Environmental/Trinity Consultants 2021). Default electricity generation rates in CalEEMod were used based on the proposed land use and climate zone and were adjusted to reflect compliance with 2019 Title 24 standards. In addition, the project proposes use of a private well for water and an on-site septic system for sewage disposal. The project would operate a 6,000 square foot operations and maintenance building onsite. Water consumption estimates for both indoor and outdoor water use were estimated using CalEEMod default values. Electricity use for water supply were based on the electric pump rating, pump flowrate, electricity intensity factors from CalEEMod for Kern County, and the indoor and outdoor water use default values in CalEEMod.

Natural Gas

Default natural gas usage rates in CalEEMod for the proposed land use and climate zone were used and adjusted based on compliance with 2019 Title 24 standards.

Petroleum

During operations, the majority of fuel consumption resulting from the project would involve the use of motor vehicles traveling to and from the project site and water trucks.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the vehicle miles traveled (VMT) as a result of project operation. Potential impacts were assessed through projected traffic trip generation during operation as provided by the CARB EMFAC 2017 outputs in the Air Quality Impact Analysis (Insight Environmental/Trinity Consultants 2021) for the project. The conversion factor for gasoline is 8.78 kilograms per metric ton of CO2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton of CO2 per gallon (The Climate Registry 2021).

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify, per *CEQA Guidelines* Appendix G, 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.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Project Impacts

Impact 4.6-1: The project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Construction

Electricity

Temporary electric power for as-necessary lighting and electronic equipment, such as computers inside temporary construction trailers, would be provided by PG&E. The electricity used for such activities would be temporary, would be substantially less than that required for project operation, and would therefore have a negligible contribution to the project's overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection. Any minor amounts of natural gas that may be consumed as a result of project construction

would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Petroleum

Heavy-duty construction equipment of various types would be used during each phase of project construction. The CalEEMod analysis discussed in the projects Air Quality Impact Analysis (Insight Environmental/Trinity Consultants 2021) lists the assumed equipment usage for each phase of construction (see Appendix C of this EIR). Based on that analysis, over all phases of construction, diesel-fueled construction equipment would run for an estimated 51,800 hours, as summarized in Table 4.6-1, *Hours of Operation for Construction Equipment*.

TABLE 4.6-1: HOURS OF OPERATION FOR CONSTRUCTION EQUIPMENT

Construction Phase	Hours of Equipment Use
Grading	11,968
Gravel Roads	1,408
Trenching/Electrical	5,984
Pile Driving/Panel Assembly	5,280
Substation	11,872
T-Line	15,288
Total	**51,800**

SOURCE: Insight Environmental/Trinity Consultants 2021.

The estimated diesel fuel use from construction equipment is shown in Table 4.6-2, *Construction Equipment Diesel Demand*.

TABLE 4.6-2: CONSTRUCTION EQUIPMENT DIESEL DEMAND

Phase	Pieces of Equipment[a]	Equipment CO_2 (MT)[a]	Kilograms of CO_2 per Gallon[b]	Gallons
Grading	51	462.68	10.21	45,316.63
Gravel Roads	4	50.52	10.21	4,947.91
Trenching/Electrical	18	225.04	10.21	22.041.08
Pile Driving/Panel Assembly	5	69.94	10.21	6.850.43
Substation	14	618.03	10.21	60.531.65
T-Line	26	823.01	10.21	80.607.98
			Total	**220,295.68**

NOTES: CO_2 = carbon dioxide; MT = metric ton

SOURCES:

[a] Insight Environmental/Trinity Consultants 2021

[b] The Climate Registry 2021.

Calculations for total worker, vendor, and hauler fuel consumption are provided in Table 4.6-3, *Construction Worker Vehicle Gasoline Demand*, and Table 4.6-4, *Construction Vendor Truck Diesel Demand*.

TABLE 4.6-3: CONSTRUCTION WORKER VEHICLE GASOLINE DEMAND

Phase	Trips	Vehicle CO_2 (MT)[a]	Kilograms of CO_2 per Gallon[b]	Gallons
Grading	3,300	17.46	8.78	1,989.01
Gravel Roads	572	3.03	8.78	344.76
Trenching/Electrical	2,200	11.64	8.78	1,326.00
Pile Driving/Panel Assembly	13,200	69.85	8.78	7,956.04
Substation	0	0	8.78	0
Gravel Roads	0	0	8.78	0
			Total	**31,436.63**

NOTES: CO_2 = carbon dioxide; MT = metric ton
SOURCES:
[a] Insight Environmental/Trinity Consultants 2021
[b] The Climate Registry 2021.

TABLE 4.6-4: CONSTRUCTION VENDOR TRUCK DIESEL DEMAND

Phase	Trips	Vehicle CO_2 (MT)[a]	Kilograms of CO_2 per Gallon[b]	Gallons
Grading	0	0.00	10.21	0.00
Gravel Roads	0	0.00	10.21	0.00
Trenching/Electrical	0	0.00	10.21	0.00
Pile Driving/Panel Assembly	3.215	577.09	10.21	56,522.04
Substation	0	0.00	10.21	0.00
T-Line	0	0.00	10.21	0.00
			Total	**56,522.04**

NOTES: CO_2 = carbon dioxide; MT = metric ton
SOURCES:
[a] Insight Environmental/Trinity Consultants 2021
[b] The Climate Registry 2021.

As shown in Tables 4.6-2 through 4.6-4, the project is estimated to consume 288,434 gallons of petroleum during the construction phase. For disclosure, by comparison, approximately 28.7 billion gallons of petroleum are consumed in California annually (EIA 2020d). Also, for disclosure, countywide total petroleum use by vehicles is expected to be 683 million gallons per year and 15 million gallons per year for offroad equipment in 2022 (CARB 2021).

Starting in 2014, CARB adopted the nation's first regulation aimed at cleaning up off-road construction equipment such as bulldozers, graders, and backhoes. These requirements ensure fleets gradually turnover the oldest and dirtiest equipment to newer, cleaner models and prevent fleets from adding older, dirtier equipment. As such, the equipment used for project construction would conform to CARB regulations and California emissions standards. It should also be noted that there are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

Construction contractors would be required to comply with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with anti-idling and emissions regulations would result in a more efficient use of construction-related energy and the minimization or elimination of wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additional construction-source energy efficiencies would occur due to required California regulations and best available control measures (BACM). For example, CCR Title 13, Motor Vehicles, Section 2449(d)(2) Idling, limits idling times of construction vehicles to no more than five minutes, thereby precluding unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Section 2449(d)(2) requires medium and large fleets adopt a written idling policy informing operators that idling is limited to 5 consecutive minutes or less. Equipment rental agreements must also inform renters/lessees of this idling restriction. In this manner, construction equipment operators are required to be informed that engines are to be turned off at or prior to five minutes of idling. Enforcement of idling limitations is realized through periodic site inspections conducted by County building officials, and/or in response to citizen complaints.

In general, the construction processes promote conservation and efficient use of energy by reducing raw materials demands, with related reduction in energy demands associated with raw materials extraction, transportation, processing and refinement. Use of materials in bulk reduces energy demands associated with preparation and transport of construction materials as well as the transport and disposal of construction waste and solid waste in general, with corollary reduced demands on area landfill capacities and energy consumed by waste transport and landfill operations.

In addition, the project will be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and 4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology (BACT) requirements.

Moreover, the project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes, which would minimize fuel consumption.

Although construction activities would consume petroleum-based fuels, consumption of such resources would be temporary and would cease upon the completion of construction. Further, the petroleum consumed related to project construction would be typical of construction projects of similar types and sizes and would not necessitate new petroleum resources beyond what are typically consumed in California. Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient, impacts would be less than significant.

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. Implementation of Mitigation Measure MM 4.3-5, 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 require idling restrictions for construction equipment in compliance with Title 13, California Code of Regulations, Section 2449 et seq. Compliance with Title 13 would also help to reduce unnecessary fuel consumption during project construction. Implementation of these mitigation measures would also help to reduce unnecessary fuel consumption during project construction. Therefore, with implementation of mitigation measures the project would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuels and impacts would be reduced to less than significant.

Operation

Electricity

The operational phase would require electricity for multiple purposes, including building heating and cooling, lighting, electronics, electric pump, and electric forklifts. CalEEMod was used to estimate project emissions from electricity uses (see the projects Air Quality Impact Analysis for calculations). Default electricity generation rates in CalEEMod were used based on the proposed land use and climate zone and were adjusted to reflect compliance with 2019 Title 24 standards. In addition, the project proposes use of a private well for water and an on-site septic system for sewage disposal. According to these estimations, the project would consume approximately 74,407 kilowatt-hours per year (Insight Environmental/Trinity Consultants 2021). However, as the project is a 300 MW solar photovoltaic energy producer, it is estimated that it will generate 603,206,912 kWh per year (National Renewable Energy Laboratory 2021). Therefore, the project would be a net energy exporter of 603,132,505 kWh per year.

For disclosure, in comparison, approximately 78 billion kilowatt-hours of electricity were used in PG&E's service area in 2019 (CEC 2020a). As such, the project's electricity use would be more efficient than what is required, and would likely be even lower than the calculations presented above.

In summary, although electricity consumption would increase at the project site due to implementation of the project, the project would comply with the applicable energy standards and regulations and would implement energy-efficiency PDFs. Construction electricity usage would be minimal relative to the project's overall energy consumption. For these reasons, electricity consumption of the project would not be considered inefficient, wasteful, or unnecessary, and impacts would be less than significant.

Natural Gas

Default natural gas usage rates in CalEEMod for the proposed land use and climate zone were used and adjusted based on compliance with 2019 Title 24 standards. According to these estimations, the project would consume approximately 108,480 kBTU per year (Insight Environmental/Trinity Consultants 2021). This amount of natural gas is equivalent to 1,085 therms. For disclosure, in 2019, PG&E delivered approximately 4.9 billion therms to the region (CEC 2020b, 2020c).

Petroleum

During operations, the majority of fuel consumption resulting from the project would involve the use of motor vehicles traveling to and from the project site and water trucks.

The annual VMT attributable to the project is expected to be 54,584 VMT (Insight Environmental/Trinity Consultants 2021). The project would consume an estimated 1,917 gallons of gasoline per year and 435 gallons of diesel per year from operation of vehicle trips traveling to and from the project site. For disclosure, by comparison, approximately 28.7 billion gallons of petroleum are consumed in California annually (EIA 2020d). Also, for disclosure, countywide total petroleum use by vehicles is expected to be 749 million gallons per year in 2024 (CARB 2021).

Over the lifetime of the project, the fuel efficiency of the vehicles being used by the project is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted a new approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and ZEVs in California (CARB 2017). The project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes, which would minimize fuel consumption. Additionally, in response to SB 375, CARB adopted the targets for KCOG of a 5% reduction in emissions per capita by 2020 and a 10% reduction by 2035 below a 2005 baseline. The RTP/SCS serves as a guide for achieving public policy decisions that will result in balanced investments for a wide range of multimodal transportation improvements (KCOG 2018). As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

In summary, although project implementation would result in an increase in petroleum use during construction and operation, over time vehicles would use less petroleum due to advances in fuel economy. Given these considerations, petroleum consumption associated with the project would not be considered inefficient or wasteful, and impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.3-5 and MM 4.3-7 as provided in Section 4.3, *Air Quality*.

Level of Significance

Impacts would be less than significant.

Impact 4.6-2: The project conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The project would be consistent with applicable standards, regulations, plans, and policies in place to reduce energy consumption. It is anticipated that worker vehicles would meet the applicable standards of AB 1493 (vehicles manufactured in 2009 or later), and as a result would likely consume less energy as fuel efficiency standards are increased and vehicles are replaced. The project would also support the goals within SB 100, AB 2514, and SB 32 for the production of renewable energy. The project is expected to produce an estimated 603,206,912 kilowatt hours of renewable electricity per year. Moreover, the project would support the implementation of the County's General Plan through implementation of additional renewable energy generation facilities within the County. For reasons stated, the project would be consistent with all applicable energy plans and policies; therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic area considered for the analysis of cumulative energy impacts is Kern County. Potential cumulative impacts on energy would result if the project, in combination with past, present, and future projects, would result in the wasteful or inefficient use of energy. Significant energy impacts could result from development that would not incorporate sufficient building energy efficiency features or would not achieve building energy efficiency standards, or if projects result in the unnecessary use of energy during construction or operation.

The project would not result in wasteful, inefficient, or unnecessary use of energy during construction or operations, nor would it conflict with an applicable plan. Cumulative projects within Kern County would have a construction period during which electricity, natural gas, and petroleum would be used; however, it is expected that such usage would be temporary and would not constitute a wasteful, inefficient, or unnecessary consumption of energy. Additionally, although some of the cumulative projects within Kern County could result in increases in energy consumption during their operation, the increased demand is anticipated to be minimal relative to statewide energy usage and, in combination with the project, would not contribute to any potentially significant cumulative energy impacts. Furthermore, any commercial and residential cumulative projects that may take place in Kern County that include long-term energy demand would be subject to CALGreen, which provides energy efficiency standards. In addition, cumulative projects would be required to meet or exceed the Title 24 building standards, as applicable, further reducing the inefficient use of energy. Future development would also be required to meet even more stringent requirements, including the objectives set forth in the AB 32 Scoping Plan, which seek to make all newly constructed residential homes produce a sustainable amount of renewable energy through the use of on-site photovoltaic solar systems. Furthermore, various federal and state regulations, including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program, would serve to reduce the transportation fuel demand of cumulative projects. Finally, the project would result in a net export of renewable energy within the County.

Although project construction would result in a contribution to cumulative transportation fuel consumption in California, construction of the project would implement Mitigation Measures MM 4.3-5 and MM 4.3-7, as provided in Section 4.3, *Air Quality*, of this EIR, which would require the use of energy-efficient equipment during construction and enforce idling restrictions. Implementation of these mitigation measures would also help to reduce unnecessary fuel consumption during project construction.

For the reasons above, the project, together with the cumulative projects, would not result in wasteful, inefficient, or unnecessary use of energy, or conflict with applicable plans. Therefore, the project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to energy, and the impacts would be less than significant.

Mitigation Measures

Implement MM 4.3-5 and MM 4.3-7, (see Section 4.3, *Air Quality*, of this EIR, for full mitigation measure text).

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

4.7 Geology and Soils

4.7.1 Introduction

This section describes the existing geological conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Sandrini Solar Project (project). This section also provides an analysis of potential impacts to paleontological resources as a result of the project. Information in this section is largely based on the Revised Preliminary Soil and Geologic Evaluation (Appendix K) and the Paleontological Resource Assessment (Appendix I), provided as appendices to this Environmental Impact Report (EIR).

4.7.2 Environmental Setting

Regional Geologic Setting

The project site is located in a transitional area of the Great Valley geomorphic province and the Coast Ranges geomorphic province to the southwest. The project site is also located in the structure region as identified by the United States Geologic Survey (Bartow 1991) as the San Joaquin Valley portion of the southern Sierran block. This area is composed of a broad syncline with deposits of marine and overlying continental sediments from the Jurassic to Holocene age. The thickness of these sediments tends to increase to the west, and can reach a thickness as much as 20,000 feet on the west side of the San Joaquin Valley syncline.

The Tehachapi Mountains mark the southern boundary of the Great Valley province, which is not far from the intersection of the San Andreas and Garlock Faults. The Garlock Fault is a major strike-slip fault that is oriented in a roughly east/west direction. The San Andreas Fault is the main fault in an intricate fault network cutting through the California coastal region; the fault extends from Northern California to the San Bernardino area of Southern California. The project site is not intersected by any known regional faults, but is located in a region considered seismically active (Appendix K).

Local Geologic Setting

In preparation of its preliminary geologic and soil report (Appendix K), BSK Associates performed site reconnaissance on December 12, 2019; December 20 to 21, 2019; and October 13, 2020, to observe site features and soil conditions. An unmanned aircraft system (UAS) was used for reconnaissance to collect aerial photographs of the project area. Examination of aerial photographs did not reveal indications of active fault traces. New Rim Ditch was photographed, which crosses an adjacent property north of the project site, and a former pond was photographed that appears to have deposits of salts on the ground surface. A full summary of photograph findings is described in detail in the geologic and soil report (Appendix K). The following information describes the project's geologic setting and potential geologic hazards. This information is based on BSK's field reconnaissance and review of published maps and reports.

Subsurface Soils

Based on the U.S. Department of Agriculture Survey Geographic (SSURGO) Database for Kern County, BSK determined that project area soils would likely be composed of the following types (USDA 2020):

- Bakersfield sandy loam, partially drained, 0% to 1% slopes
- Cerini sandy loam, 0% to 2% slopes
- Calflax loam, 0% to 1% slopes
- Excelsior sandy loam, 0% to 2% slopes
- Excelsior fine sandy loam, saline-sodic, 0% to 1% slopes
- Garces loam, 0% to 1% slopes
- Oldriver loam, partially drained, sodic, 0% to 1% slopes
- Vineland loamy sand, drained, 0% to 1% slopes

Per the U.S. Department of Agriculture maps, most of the project area soils have a clay fraction with low to medium plasticity and low to moderate expansion potential (USDA 2020).

Groundwater Conditions

The project site is within the San Joaquin Basin, Kern County Groundwater Subbasin. The Kern County Groundwater subbasin 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.

The geologic and soils report gathered mapping data from the California Department of Water Resources that indicates that in spring 2018, depth to groundwater in the project area ranged from approximately 120 feet below the ground surface (bgs) to 320 feet bgs (DWR 2018a). BSK also gathered groundwater elevation data from the California Department of Water Resources obtained from wells in the vicinity of the project site. This data indicated that in some areas, groundwater may have been as shallow as 6 feet bgs (DWR 2018b).

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. According to the BSK report, the nearest fault-rupture hazard zone, as defined by the California Geological Survey, is associated with the Wheeler Ridge Fault Zone, located approximately 2.6 miles southeast of the project site (Appendix K). In addition, the White Wolf Fault Zone is located approximately 6.5 miles to the east. Within the project area there are also numerous unnamed ground fractures that are associated with the 1952 Arvin-Tehachapi earthquake. However, these ground fractures are not considered fault traces, and they are not designated by the State of California as Fault-Rupture Hazard Zones, but are secondary features attributed to lurching or seismic settlement of sedimentary deposits (CDM 1952; CDMG 1984). Observation of the high-resolution aerial photographs collected from BSK's aerial drone surveys did not show any current evidence of surface rupture or displacement features (Appendix K).

Seismic Hazard Zones (Liquefaction and Landslides)

Zones of Required Investigation, referred to as "Seismic Hazard Zones" in California Code of Regulations (CCR) Article 10, Section 3722, are areas where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslide ground displacements. There are no mapped areas that identify Seismic Hazard Zones in the project area. The nearest mapped zone is located in the Whitaker Peak Quadrangle, approximately 35 miles southeast of the project site (Appendix K).

Liquefaction describes a condition in which a saturated, cohesionless soil loses shear strength during earthquake shocks. Ground motion from an earthquake may induce cyclic reversals of shearing strains of large amplitude. Lateral and vertical movements of the soil mass, combined with loss of bearing strength, usually result from this phenomenon. Fine, well-sorted, loose sand; shallow groundwater; severe seismic ground motion; and particularly long durations of ground shaking are conditions conducive for liquefaction. The depth to groundwater, based on data collected by BSK, indicates that groundwater depths are generally greater than 50 feet bgs; however, a different source indicates that shallow groundwater (as much as 6 feet bgs) may be present in the project area (Appendix K).

Landslides

The project site and surrounding areas are essentially flat, and therefore the potential hazard due to landslide is low. As the BSK report notes, a levee berm along New Rim Ditch is sloped and may have the potential for failure under extreme rainfall or a seismic event (Appendix K).

Land Subsidence

Land subsidence in California generally occurs in areas of fluid removal (petroleum and groundwater) and in arid areas due to hydrocompaction of loose near-surface soils.

The project site is not located in an area susceptible to subsidence due to petroleum withdrawal. The BSK report notes that the project site is located in a region with historical subsidence due to groundwater withdrawal (Borchers and Carpenter 2014). Recent studies using interferometric synthetic aperture radar (InSAR) from satellites and aircraft have produced maps of subsidence with sensitivity of fractions of an inch (Farr et al. 2017). Regional subsidence due to groundwater withdrawal in the area is anticipated, but localized impacts, such as differential settlements, would be minimal. Differential settlements of this type generally impact gravity-based fluid systems over long distances (canals, water pipelines) (Appendix K). These types of systems are not part of the proposed development.

Hydrocompaction is the consolidation of loose dry surface soils from the infiltration of water. Materials of unusually low density deposited in areas of low rainfall undergo significant compaction when they become thoroughly wetted. The project site is not located in an area known for hydrocompaction, but site soils could be susceptible to some level of hydrocompaction (Appendix K).

Expansive Soils

Expansive soils have the potential to cause displacement and possible damage to surface improvements, such as concrete slab floors and exterior walkways. The geologic and soils report notes that expansive soils may be located in the project area (Appendix K). The potential effects of the shrinking and swelling of expansive soils and the associated impacts can be mitigated through prudent grading and design of the structures. Some of the soils types in the project area have a clay fraction and may be expansive.

Flood Hazards

Federal Emergency Management Agency (FEMA) flood hazard data was obtained regarding the potential for flooding at the project site. According to FEMA's Flood Hazard Map Layer GIS data, some of the project site is in FEMA Flood Zone A (1% or greater annual chance of flooding) (FEMA 2018).

Corrosion

All buried iron, steel, cast iron, ductile iron, galvanized steel, and dielectric coated steel or iron as part of construction must be properly protected against corrosion depending on the critical nature of the structure. As part of the geology and soils report reconnaissance, a portion of the project site (Assessor's Parcel Number 295-130-57) was observed to have a high concentration of salts that represent alkaline soils with a potential to be corrosive to metallic objects (Appendix K).

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 forma and activity of such organisms. These resources are located within sedimentary rocks or alluvium and are nonrenewable.

A paleontological assessment for the project was performed by the San Diego Natural History Museum. The report notes that project components are primarily underlain by late Holocene-age (less than 4,250 years old) sedimentary deposits, including alluvial fan deposits, lacustrine deposits of historic Kern Lake, and eolian and dune deposits. The project paleontological setting is also defined by Holocene- to late Pleistocene-age (less than 126,000 years old) alluvial fan and alluvial valley deposits. The report presumes that the Holocene-age deposits transition downward into older, Pleistocene-age deposits, which is estimated to occur at 15 feet or more below the existing surface grade (Appendix I).

Records Search

A records search for paleontological locality data within the project site and the vicinity was obtained from the San Diego Natural History Museum, and online records were reviewed at the University of California's Museum of Paleontology. Based on the results of the paleontological records search and literature review, fossils have not been documented from Holocene-age or Pleistocene-age sedimentary deposits within a 5-mile radius of the project site. However, fossils are known from Pleistocene-age alluvial deposits at numerous locations elsewhere in the southern San Joaquin Valley. These deposits have yielded fossil remains of large-bodied mammals (e.g., mammoth, horse, pronghorn, camel, bison, dire wolf), as well as small mammals (e.g., rabbit, kangaroo rat, pocket gopher) and other terrestrial and freshwater vertebrates (e.g., freshwater fish, snakes, lizards, turtles, birds) (Appendix I).

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.

The California Environmental Quality Act (CEQA) is the major environmental statute that guides the design and construction of projects on nonfederal lands in California. This statute establishes a specific process for environmental impact analysis and public review. In addition, the project proponent must comply with other applicable federal, state, and local statutes, regulations, and policies. 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 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 surface water. Such discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Projects that disturb 1 acre or more are required to obtain NPDES coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit), Order No. 2009-0009-DWQ. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes best management practices (BMP) 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*, of this EIR.

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 Earthquake Hazards Reduction Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 to refine 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 FEMA as the lead agency of the program, and assigns it several planning, coordinating, and reporting responsibilities. Programs under the NEHRP help inform and guide planning and building code requirements, such as emergency evacuation responsibilities and seismic code standards.

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, established in the United States Code (USC), is the Antiquities Act of 1906 (54 USC 320301–320303 and 18 USC 1866[b]), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federally administered lands, the latter of which would include fossils. The Antiquities Act 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 USC 4321–4327). The Federal Land Policy Management Act of 1976 (P.L. 94-579; 90 Stat. 2743, USC 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values, and Title 40 of the 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.

State

The Alquist-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 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 (Bryant and Hart 2007). 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 construction of buildings or structures for human occupancy, such as the operations and maintenance (O&M) 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 Public Resources Code Chapter 7.8, Division 2, the California Geologic Survey is directed to delineate seismic hazard zones. The purpose of the Seismic Hazards Mapping Act of 1990 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, and 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 in 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 and structure and any appurtenances connected or attached to such buildings or structures throughout California.

The 2019 edition of the CBC is based on the 2018 International Building Code 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 on January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures. It provides requirements for general structural design, and includes means for determining earthquake loads, which is defined as 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), and other loads (such as wind loads) for inclusion into building codes. Seismic design provisions of the CBC 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 resist minor earthquakes without damage; resist moderate earthquakes without structural damage but with some nonstructural damage; and resist major earthquakes without collapse, but with some structural and nonstructural damage. Conformance to the current CBC 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 for a structure. The seismic design category is a classification system that combines the occupancy categories with the level of expected ground motions at the site; seismic design categories 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 seismic design category in accordance with CBC Chapter 16. CBC Chapter 18 covers the requirements of geotechnical investigations (Section 1803); excavation, grading, and fills (Section 1804); load-bearing of soils (Section1806); and 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 Section 5097.5 and Section 30244. 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 paleontological resources from developments on public (state, county, city, district) lands.

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 California State Water Resources Control Board (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 of California's waters.

In 1999, the state adopted the NPDES General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit) (SWRCB Order No. 2012-0006-DWQ, NPDES No. CAS000002). The Construction General Permit 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 Construction General Permit by submitting a Notice of Intent for coverage, developing a SWPPP, and implementing BMPs to address construction site pollutants.

The SWPPP should contain a site map that 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. site The SWPPP must list the BMPs 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 Construction General 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 RWQCBs.

Local

Kern County General Plan

Construction and operation of the solar facility and battery energy storage system would be subject to policies and regulations contained within the Kern County General Plan (County of Kern 2009), Kern County Zoning Ordinance, and Kern County Code of Building Regulations pertaining to the avoidance of geologic hazards and/or the protection of unique geologic features, as well as policies for the preservation of paleontological resources. The policies, goals, and implementation measures in the Kern County General Plan for 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 and not specific to development. These measures are not listed below, but as stated in Chapter 2, *Introduction*, of this EIR, all policies, goals, and implementation measures in the Kern County General Plan (County of Kern 2009) are incorporated by reference.

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

1.3: Physical and Environmental Constraints

Goals

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.

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

Policies

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

Goals

Goal 1: Minimize injuries and loss of life and reduce property damage.

4.3: Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Policies

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). The County of Kern (County) has adopted the CBC (2019 Edition), with some modifications and amendments. The County has made local modifications, additions, and amendments to the codes as allowed, which were determined reasonably necessary because of local climatic, geological, or topographical conditions (prescribed in Title 17 of the Ordinance Code). The County's Code of Building Regulations applies to grading and new building construction, and to the installation of new mechanical, plumbing, and electrical systems.

Chapter 17.28: Kern County Grading Code

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, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction. Sections of the County 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 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.

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 Engineering and Survey Services Department

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for projects with construction disturbing 1 acre or more within Kern County. This form requires the applicant to provide background information on construction activities and to identify whether stormwater runoff has the potential of discharging into waters of the United States; will be contained on site; or will discharge indirectly off site to a river, lake, stream, or drainage facility. Should stormwater runoff be contained on site and not discharged into any waters, no special actions are required. Should stormwater runoff discharge into waters of the United States, compliance with the SWRCB's Construction General Permit would be required, which requires preparation of a SWPPP. Should stormwater runoff not drain to waters of the United States (e.g., drains to a terminal drainage facility), the applicant would be required to develop a SWPPP and BMPs. Projects disturbing at least 1 acre of soil in Kern County are

required to apply for a County NPDES Storm Water Program Permit. Prior to issuance of the permit, Kern County Engineering, Surveying, and Permit Services must verify the applicant's stormwater plans. Applicants must apply for the permit under one of the following four conditions:

1. All stormwater is retained on site and no storm water runoff, sediment, or pollutants from on-site construction activity can discharge directly or indirectly off site or to a river, lake, stream, municipal storm drain, or off-site drainage facilities.
2. All stormwater 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 stormwater 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 and 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

4.7.4 Impacts and Mitigation Measures

Methodology

Potential significant impacts associated with the project were identified based on a review of existing literature, the Revised Preliminary Soil and Geologic Study (Appendix K of this EIR), and available data, including the Kern County General Plan. The Revised Preliminary Soil and Geologic Study presents findings, conclusions, and recommendations concerning development of the proposed project based on an engineering analysis of geotechnical properties of the subsurface conditions and evaluation of the underlying soils.

Project-specific potential impacts to paleontological resources within the project site were evaluated based on an analysis of existing paleontological data. The Paleontological Resources Assessment (Appendix I of this EIR) provides the results of the paleontological evaluation, including existing subsurface paleontological conditions within the project site and an analysis of the potential impacts to previously undiscovered paleontological resources as a result of the project. The three components of the analysis of existing data included a geologic map review, a literature search, and an institutional records search.

Thresholds of Significance

The following criteria, as established in CEQA Guidelines, Appendix G, were used to determine if the 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; or
- 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- 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 in areas where sewers are not available for the disposal of wastewater; or

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

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. The project would include an O&M building that would support full-time staff of up to 11 employees. Project construction is anticipated to employ approximately 650 workers. Therefore, the project would introduce people to the project site, and could thus expose people and structures to seismic risks. As discussed under the subheading *Local Geologic Setting*, the project is not located in an Alquist-Priolo Fault-Rupture Hazard Zone (Bryant and Hart 2007). However, in the technical report (Appendix K), BSK identified unnamed ground fractures that have been mapped within the boundaries of project Sites 2 and 3 (USGS 2010). These fractures are not designated by the State of California as Fault-Rupture Hazard Zones. The fractures were reportedly related to secondary surface ground failures from the 1952 Kern County Earthquake. According to the technical geologic and soils report, these fractures had reported horizontal and vertical displacements of up to 2 feet in some areas, but current reconnaissance did not show evidence of any ground displacement (Appendix K).

Construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). The County has adopted the CBC 2019 Edition (CCR Title 24), which incorporates substantially the same requirements as the International Building Code (2018 Edition), with some modifications and amendments. Adherence to all applicable regulations would reduce any potential fault rupture impacts for the project. However, because ground fractures associated with a historical seismic event have been identified within the project boundaries, Mitigation Measure (MM) 4.7-1 and MM 4.7-2 would be incorporated to mitigate potential impacts to less than significant. MM 4.7-1 would require the project to locate inhabited structures outside of the mapped fractures unless they are fully investigated through trenching. MM 4.7-2 would require that all critical equipment and underground utilities and transmission lines be designed to accommodate potential displacements of 2 feet if located within 500 feet of the mapped ground fractures. These mitigation measures would reduce potential exposure of structures

and potential damage to critical equipment and infrastructure from fault rupture, and impacts would be less than significant.

Mitigation Measures

MM 4.7-1: The project proponent/operator shall not place habitable structures, defined as structures that are occupied 2,000 hours per year or more, within 500 feet of the mapped ground fractures unless a fault investigation is completed by a California licensed Geotechnical Engineer or Engineering Geologist, or the structure is otherwise determined by the Geotechnical Engineer or Engineering Geologist to be safe, consistent with Special Publication 42 by the California Geological Survey.

MM 4.7-2: If located within 500 feet of mapped active fault traces, critical equipment and underground utilities/transmission lines shall be designed to accommodate ground displacements of at least 2 feet, consistent with current Kern County Building Code requirements and approval from the Kern County Engineering Department.

Level of Significance after Mitigation

Impacts would be 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 involving: strong seismic ground shaking.

The project is proposed in a seismically active 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 photovoltaic modules or other ancillary facilities and injury to workers or visitors could result.

However, prior to the issuance of grading permits, the project proponent would be required to design project infrastructure to withstand substantial ground shaking in accordance with all applicable ordinances of the Kern County Building Code (Chapter 17.08) and the current CBC. The CBC contains seismic safety provisions with the aim of preventing building collapse and structural damage during an earthquake. In addition, as described below, MM 4.7-3 would require a final design-level geotechnical report evaluating soil conditions and geologic hazards, performed by a California licensed geotechnical engineer consistent with CBC requirements. MM 4.7-3 would also require a California geotechnical engineer be hired by the project proponent to design project facilities to withstand probable seismically induced ground shaking. All grading and construction on site would adhere to the specifications, procedures, and site conditions contained in 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 any 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 on-site 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 on-site staff from potential hazards associated with the facilities that could result from an earthquake. Required compliance with the Kern County Building Code and the CBC, and

implementation of MM 4.7-3 would ensure that seismic hazards would be minimized; impacts related to ground shaking would be less than significant.

Mitigation Measures

MM 4.7-3: Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full 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. The project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California registered professional engineer.

a. The geotechnical study must be signed by a California registered and licensed professional geotechnical engineer or engineering geologist and must include the following:

   1. Location of fault traces and potential for surface rupture and ground shaking potential.
   2. Maximum considered earthquake and associated ground acceleration for design.
   3. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils.
   4. Stability of any existing or proposed cut-and-fill slopes.
   5. Identification of collapsible or expansive soils.
   6. Foundation material type.
   7. Potential for wind erosion, water erosion, sedimentation, and flooding.
   8. Location and description of unprotected drainage that could be impacted by the proposed development.
   9. 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.

c. 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 or mitigated.

e. The final structural design shall be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements shall be provided to the on-site 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

Impacts would be less than significant.

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.

The proximity of existing active faults to the project site presents the potential for seismic ground shaking, which could result in damage to structures and associated improvements if underlain by subsurface materials susceptible to liquefaction. Should liquefiable materials be present at the project site, damage to the photovoltaic modules and other ancillary facilities could result, and construction workers and employees could be exposed to potential adverse effects.

The depth to groundwater, based on data collected for the geological and soils report, is greater than 50 feet bgs, but other historical data seems to indicate a potential for shallow groundwater to be present in the project area (Appendix K). The project proponent would be required to perform a design-level geotechnical report that would evaluate and address the site-specific liquefaction potential of the project; this would be required per MM 4.7-3, prior to the issuance of any building or grading permits. The design-level geotechnical report would provide specific requirements necessary for design of the structures in relation to seismic-related ground failure, including liquefaction, as required by MM 4.7-3. These design requirements would comply with CBC and State of California design standards, Chapter 16, which are required by law for all new structures in Kern County. These design standards and codes were established to reduce the potential impacts to structures from seismic-related ground failure, including liquefaction; project impacts would be less than significant.

Mitigation Measures

MM 4.7-3 would be required.

Level of Significance after Mitigation

Impacts would be 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.

Except for the area near New Rim Ditch, the project site and surroundings are essentially flat; little topographic variation is exhibited across the project site. The project would not include any habitable structures, and the potential hazard due to landslides from adjacent properties is not anticipated due to the flat terrain surrounding the project site.

Development near the New Rim Ditch Levee would maintain a sufficient setback distance to meet the requirements of 2019 CBC Section 1808.7. By complying with this development standard, the project would ensure that potential slope failures along New Rim Ditch would not cause substantial adverse effects, including risk of loss, injury, or death involving landslides. Compliance with setback standards would reduce the hazard of landslides to less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be 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.

According to the Kern County General Plan Safety Element, the project is not located in a zone that is prone to soil erosion (County of Kern 2009). The project site is essentially flat, which minimizes the possibility for the formation of significant rills or gullies by water. However, there is the potential for soils to be eroded by wind and project construction earthwork.

Construction of the project and associated improvements would involve earth-disturbing activities that could expose soils to the effects of wind or water erosion. Although the project site and surrounding area consist of relatively flat topography, and although the project 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. As noted in Chapter 3, *Project Description*, of this EIR, a SWPPP would be prepared and implemented per the requirements of the NPDES Construction General Permit Program. The SWPPP would detail that existing vegetation and topography are to be preserved to the maximum extent possible. The SWPPP would also specify various types of BMPs, including erosion control BMPs, to prevent soil from moving off site; all temporary erosion control measures required by the Kern County Grading Code (Chapter 17.28.140) would be incorporated into the SWPPP, as required by MM 4.7-4, detailed below. Implementation of this mitigation measure and associated erosion control BMPs would ensure that the project would not result in substantial soil erosion or topsoil. Impacts would be less than significant.

In addition, per MM 4.7-3, the project proponent would be required to submit a design-level geotechnical report, grading plans, and drainage calculations 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 this mitigation measure and performance standards within the Grading Code 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 this mitigation measure.

Project operations would include the periodic cleaning of the solar panels with water. However, this is not expected to result in soil erosion because of the infrequency of these activities and the limited volumes of water involved; water is expected to infiltrate into the ground and not generate substantial erosion or soil loss. Project operations would not require ground disturbance. As a result, project operation would have a less-than-significant impact as it relates to soil erosion.

Mitigation Measures

MM 4.7-4: The construction contractor shall incorporate best management practices (BMPs) consistent with the National Pollutant Discharge Elimination System Construction General Permit Program for all construction projects that would not retain all stormwater on site

and the Kern County Grading Code. The project proponent shall prepare an Erosion and Sedimentation Control Plan and a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP shall be prepared by a Qualified SWPPP Developer and submitted for review and approval by the applicable Regional Water Quality Control Board. The SWPPP BMPs shall include the following:

- Scheduling to avoid ground disturbance during rain events to the maximum extent possible.
- Preservation of existing vegetation and topography to the maximum extent practicable.
- Stabilized construction entrances and exits.
- Erosion control (including all pertinent temporary erosion control practices as specified in Chapter 17.28.140 of the Kern County Grading Code), such as mulching, temporary drains and cullies, sandbag barriers, geotextiles and mats, silt fences, brush or rock filters, earth dikes, straw bale barriers, and sediment traps.
- Sediment control.
- Waste management.
- Good housekeeping.
- Post-construction site stabilization.
- Prior to initial construction mobilization, pre-construction surveys shall be performed and sediment and erosion controls shall be installed in accordance with the approved SWPPP. A copy of the approved SWPPP shall be submitted to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

Impacts would be less than significant.

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 discussed for Impact 4.7-4, due to the flat topography of the project site, the risk of on-site or off-site landslides associated with development of the project is considered negligible. The depth to groundwater, based on data collected for the geological and soils report, is greater than 50 feet bgs, but historical data also indicates that shallow groundwater may be present in the project area (Appendix K). The project proponent would be required to perform a design-level geotechnical report (MM 4.7-3) to address potential soil stability impacts and prescribe specific design requirements to address these potential impacts related to unstable soils, such as lateral spreading, subsidence, and liquefaction, through application of geotechnical engineering standards based on site-specific conditions. These design requirements would comply with CBC and State of California design standards Chapters 16 and 18, which are required by law for all new structures in Kern County. The design-level geotechnical report would be required per MM 4.7-3 prior to the issuance of any building or grading permits. Based on the conclusions and recommendations of the geological and soils report (Appendix K), potential soil stability–related impacts would be minimized. Through the implementation of MM 4.7-3, impacts would be less than significant.

Mitigation Measures

MM 4.7-3 would be required.

Level of Significance after Mitigation

Impacts would be 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.

Expansive soils are fine-grained soils (generally high plasticity clays) that can undergo a significant increase in volume with an increase in water content, and a significant decrease in volume with a decrease in water content. Changes in the water content of a highly expansive soil can result in severe distress to structures constructed on or against the soil.

The shrink/swell behavior of expansive soils can lead to damage of structures over time if not addressed appropriately prior to construction. However, as described above, MM 4.7-3 requires that a design-level geotechnical report be performed by a qualified geotechnical engineer on the project site to evaluate soil conditions and geologic hazards. MM 4.7-3 requires that a California geotechnical engineer provide an evaluation for expansive soils and provide recommendations consistent with CBC requirements to reduce potential adverse effects from expansive soils. All grading and construction on site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the 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, such as treatment of expansive soils or replacement with engineered fill. The final 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 on-site construction supervisor and the Kern County Building Inspector to ensure compliance. Therefore, with implementation of MM 4.7-3, impacts would be less than significant.

Mitigation Measures

MM 4.7-3 would be required.

Level of Significance after Mitigation

Impacts would be 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.

As described in Chapter 3, *Project Description*, of this EIR, the project would include development of a septic tank system for the O&M building. If not designed correctly, septic systems could result in health impacts, adversely affect natural habitat, and pollute groundwater. As such, impacts related to construction of the O&M building's septic system are potentially significant and mitigation is required.

The project's septic system would be constructed to comply with applicable requirements of the Kern County Environmental Health Services Division. The proposed septic system is anticipated to be located away from surface drainages and protected from potential surface runoff. Proper siting and design of the leach field would minimize the potential for a health or environmental impact from flooding. MM 4.7-5 would require the project operator to obtain all required permits and approvals from the Kern County Environmental Health Services Division and to implement all required conditions regarding the design and siting of the septic system and leach fields. Implementation of MM 4.7-5 would reduce potential impacts to less than significant.

Mitigation Measures

MM 4.7-5: Prior to the issuance of any building permit for the operations and maintenance facility, the project operator shall obtain all required permits and approvals from Kern County Environmental Health Services Division and shall implement all required conditions regarding the design and siting of the septic system.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

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. At the project-specific level, direct impacts can be mitigated to less than significant through implementation of paleontological mitigation.

The CEQA threshold of significance for a significant impact to paleontological resources is reached when a project is determined to "directly or indirectly destroy a significant paleontological resource or unique geologic feature." 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 to paleontological resources unless sensitive geologic units that underlie the non-sensitive unit are affected.

As described in the Paleontological Resource Assessment (Appendix I), the project site is underlain by Holocene alluvial, eolian, and lacustrine deposits at the surface. These likely overlie and transition in the subsurface into older, Pleistocene-age deposits. Impacts to paleontological resources may occur only during excavations that will disturb the deeper sedimentary deposits of Pleistocene age. Therefore, shallow excavations that will likely only disturb surficial Holocene deposits do not have the potential to impact paleontological resources, but excavations that extend greater than approximately 15 feet bgs (and would potentially disturb Pleistocene-age sedimentary deposits) have the potential to impact paleontological resources.

Trenching would be required for any placement of underground electrical, collector, and communication lines, and may include the use of trenchers, backhoes, excavators, haul vehicles, and compaction equipment. The exact depth of trenching operations to be employed during project construction (i.e., earthwork with

the potential to exceed the 15-foot depth threshold) have not been specifically identified. The paleontological resource report recommended that if earthwork extends greater than 15 feet bgs, then a paleontological mitigation plan be developed and implemented during project construction (Appendix I). This program would minimize impacts through recovery and conservation of any fossils that are unearthed during construction. However, a mitigation plan would not be necessary should earthwork activities not exceed 15 feet in depth. Implementation of MM 4.7-6 through MM 4.7-8, would be required if earthwork activities exceed the 15-foot depth threshold, and would require Paleontological Resources Awareness Training for construction workers, use of a qualified paleontological monitor during construction activities, and appropriate treatment of inadvertently uncovered paleontological resources. With implementation of these mitigation measures, impacts to paleontological resources would be reduced to less than significant.

Mitigation Measures

MM 4.7-6: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the requirements set forth in the Society for Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010), to carry out all mitigation measures related to paleontological resources. The qualified paleontologist and the lead archeologist may be the same individual.

a. Prior to the start of any ground-disturbing activities, the qualified paleontologist shall prepare 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 the archaeological resources training required by Mitigation Measure (MM) 4.5-1.

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 shall include penalties for unauthorized fossil collecting or intentional disturbance of paleontological resources.

d. The project operator shall ensure all new on-site construction personnel who have not participated in earlier Paleontological Resources Awareness 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 4.7-7: During construction, the qualified paleontologist or designated monitor shall monitor all ground-disturbing activities (with the exception of vibratory or hydraulic installation of

tracking or mounting structures and foundations or supports) that occurs at a depth of 15 feet or deeper below ground surface.

a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the Kern County Planning and Natural Resources Department and shall be based on a review of geologic maps and grading plans.

    i. During the course of monitoring, if the paleontologist can demonstrate, based on observations of subsurface conditions, that the level of monitoring could be reduced, the paleontologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances, as warranted.

b. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary.

c. Following completion of monitoring, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources on site. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, discuss recovery and curation efforts, and provide the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to an appropriate repository, such as the Natural History Museum of Los Angeles County.

MM 4.7-8: 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. Accompanying notes, maps, and photographs shall also be filed at the repository.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Impacts of the project would be 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 Chapter 3, *Project Description*, 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 discussed above, would result in less-than-significant impacts related to fault rupture. Although the 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 that would reduce the risk to people and property to less-than-significant levels. Although 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 loss, injury, or death. Cumulative projects would implement similar mitigation as required under the proposed project, which would require conducting a full geotechnical study to evaluate soil conditions and geologic hazards on the project site, as well as retaining a California registered and licensed geotechnical engineer to design project facilities. Therefore, with implementation of mitigation measures, the proposed project, combined with past, present, and other foreseeable development in the area, would not result in a cumulatively significant impact by directly or indirectly causing potential substantial adverse effects, including fault rupture, strong seismic ground shaking, or seismic-related ground failure, including liquefaction and landslides.

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 MM 4.7-3 and MM 4.7-4. Other cumulative scenario projects would be required to adhere to similar requirements, thereby minimizing cumulative 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 for seismic hazards to ensure soil stability, especially related to seismically induced erosion. With implementation of MM 4.7-3 and MM 4.7-4, the project would not contribute to any cumulative impacts related to substantial soil erosion or loss of topsoil. Cumulative impacts would be less than significant.

As previously discussed, risk of on-site or off-site landslides associated with development of the project are considered negligible. In addition, the potential for liquefaction and other geologic hazards related to liquefaction, including lateral spreading, are also considered low because historical groundwater levels in the area of the project site are generally shown to be at depths greater than 50 feet bgs (Appendix K); however, even if there were areas of shallow groundwater, liquefaction hazards are site specific and do not combine to become cumulatively considerable. Furthermore, collapse would likely be negligible in the areas surrounding the project site. However, as with the project, cumulative projects would adhere to building code requirements and would implement mitigation similar to MM 4.7-3, which would require a design-level geotechnical investigation that provides detailed site-specific data. With implementation of MM 4.7-3, the project would not contribute to any cumulative impacts related to on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Cumulative impacts would be less than significant.

With regard to expansive soils, the project would implement MM 4.7-3, which requires that a geotechnical study evaluate soil conditions and geologic hazards, to be performed by a California licensed geotechnical engineer or engineering geologist on the project site. The geotechnical study would include evaluation of

expansive soils and provide recommendations consistent with CBC requirements to reduce potential adverse effects from expansive soils. Cumulative projects would implement similar measures to address any potential for expansive soils. With implementation of MM 4.7, the project would not contribute to any cumulative impacts related to expansive soils. Cumulative impacts would be less than significant.

The geographic scope for cumulative effects to paleontological resources includes the southern portion of the San Joaquin Valley. Given similarities in geologic formations, this area is expected to contain similar types of paleontological resources. There is no temporal scope because direct impacts to paleontological resources are permanent. Cumulative impacts to paleontological resources in the study area could occur if other related projects, in conjunction with the proposed project, had or would have impacts on paleontological resources that, when considered together, would be significant. Development of the proposed project, in combination with other projects in the area, has the potential to contribute to a cumulatively significant paleontological resources impact due to the potential loss of paleontological resources unique to the region. However, mitigation measures are included in this EIR to reduce potentially significant project impacts to paleontological resources during construction of the proposed project. Implementation of MM 4.7-6 requires paleontology sensitivity training for construction workers, and MM 4.7-7 requires appropriate monitoring of construction activities for potential paleontological resources that may be encountered. Although project construction has the potential to disturb paleontological resources, implementation of MM 4.7-8 would ensure that the appropriate protocol is followed with regard to identifying and handling resources. Implementation of these mitigation measures would reduce potential impacts to paleontological resources to a less-than-significant level. With implementation of these mitigation measures, the project would not result in significant impacts to paleontological resources. Given this minimal impact and the requirement for similar mitigation for other projects in the southern San Joaquin Valley, the proposed 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 paleontological resources would be less than significant.

Mitigation Measures

MM 4.7-1 through MM 4.7-8 would be required.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

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4.8 Greenhouse Gas Emissions

4.8.1 Introduction

This section of the Environmental Impact Report (EIR) describes the affected environment and regulatory setting relating to greenhouse gases (GHGs) for the proposed Sandrini Solar Project (project). It also describes the impacts associated with GHGs that would result from the implementation of the project.

Information in this section is based primarily on the Air Quality and Greenhouse Gases Study for the Sandrini Solar Project, Kern County, California, which was prepared by Insight Environmental/Trinity and is located in Appendix C of this EIR and incorporated by reference herein. 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 Planning Department 2006), and San Joaquin Valley Air Pollution Control District's 2015 Guidance for Assessing the Mitigation Air Quality Impacts (SJVAPCD 2015).

4.8.2 Environmental Setting

GHGs and climate change are a cumulative global issue. The California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) regulate GHG emissions within California and the United States, respectively. Although CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emissions reduction. CARB has divided California into regional air basins. The project site is located in the Kern County portion of the San Joaquin Valley Air Basin and is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

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, however, absorb some of 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 consistent. However, many gases exhibit the "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 (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6),

perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs) (EPA 2017). These, in addition to several other notable GHGs, are described below.

- **Carbon dioxide:** CO_2 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). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- **Methane:** CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.
- **Nitrous oxide:** N_2O is emitted during agricultural and industrial activities and during combustion of fossil fuels and solid waste.
- **Fluorinated gases:** HFCs, PFCs, and SF_6 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 gases.
- **Sulfur hexafluoride:** SF_6 is a colorless, odorless, nontoxic, nonflammable gas. SF_6 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 lists SF_6 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.
- **Hydrofluorocarbons**: HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Perfluorocarbons**: PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to the ozone-depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Nitrogen Trifluoride (NF_3):** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.
- **Chlorofluorocarbons (CFCs):** CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere) and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric ozone (O_3).
- **Hydrochlorofluorocarbons:** HCFCs are a large group of compounds, whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.
- **Black Carbon**. Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest

fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived species that varies spatially, which makes it difficult to quantify the global warming potential. Diesel particulate matter emissions are a major source of black carbon and are toxic air contaminants that have been regulated and controlled in California for several decades to protect public health. In relation to declining diesel particulate matter from CARB's regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California have reduced by 70% between 1990 and 2010, with 95% control expected by 2020 (CARB 2014).

- **Water Vapor**. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate necessary for life.
- **Ozone**. Tropospheric O_3, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric O_3, which is created by the interaction between solar ultraviolet radiation and molecular oxygen (O_2), plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric O_3, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet-B radiation.
- **Aerosols**. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016). The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent (CO_2e). For example, SF_6 is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF_6, 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 CO_2. Therefore, an emission of 1 MT of SF_6 could be reported as an emission of 22,800 MT CO_2e (CARB 2014). Large emissions sources are reported in million metric tons (MMT) of CO_2e.

Greenhouse Gas Emissions Inventories

California

California produced approximately 425.3 gross MMT CO2e in 2018, which is below the state's GHG reduction target of 1990 level GHG emissions (i.e., 431 MMT CO_2e) by 2020. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2018, accounting for approximately 40% of total GHG emissions in the state. This sector was followed by the industrial sector at approximately 21%, and the electric power sector (including both in-state and out-of-state sources) at approximately 15% (CARB 2020). CARB has projected that, unregulated, statewide GHG emissions for

2020 will be approximately 509 MMT CO2e (CARB 2014). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

Kern County

On May 3, 2011, the Kern County Board of Supervisors signed a memorandum of understanding with the SJVAPCD to develop a communitywide GHG emissions inventory for Kern County. The Kern County Communitywide Greenhouse Gas Emission Inventory 2005 Baseline Year – 2020 Forecast was finalized in May 2012 (SJVAPCD 2012). The GHG emission inventories were estimated for nine primary sectors (electricity production and consumption, residential/commercial/industrial combustion, transportation, fossil fuels industry, industrial processes, waste management, agriculture, forestry and land use, and other sources). The 2005 base year and 2020 forecasted GHG emissions inventory is presented in Table 4.8-1, *Kern County Greenhouse Gas Emissions (MT CO_2e)*. As shown therein, the 2005 base year GHG emissions inventory was estimated at 27.0 MMT CO_2e, and the 2020 forecasted GHG emissions inventory was estimated to be 27.3 MMT CO_2e. Electricity production was estimated to generate 13,002,127 MT CO_2e in 2005 and 18,455,958 MT CO_2e in 2020. Electricity consumption during both the 2005 base year and 2020 forecasted year is provided in Table 4.8-1.

TABLE 4.8-1: KERN COUNTY GREENHOUSE GAS EMISSIONS (MT CO_2E)

Sector	2005 Base Year Emissions	Percent of 2005 Total	2020 Forecasted Emissions	Percent of 2020 Total
Electricity Consumption	6,039,114	22%	8,572,261	31%
Residential/Commercial/Industrial Combustion	1,281,498	5%	1,689,414	6%
Transportation	4,569,913	17%	4,823,756	18%
Fossil Fuels Industry	10,928,153	40%	7,002,009	26%
Industrial Processes	1,852,124	7%	2,348,754	9%
Waste Management	120,494	<1%	146,788	1%
Agriculture	2,024,470	7%	2,652,616	10%
Forestry and Land Use	11,028	<1%	14,669	<1%
Other Sources	218,823	1%	22,442	<1%
Total Gross Emissions	**3,073,572**		**443.6**	

SOURCE: SJVACPD 2012.

Climate Change

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the Sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-

wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and is the most significant driver of observed climate change (EPA 2017; IPCC 2014). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2014). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2014). Continued emissions of GHGs will cause further warming and changes in all components of the climate system.

4.8.3 Regulatory Setting

Federal

Federal Clean Air Act

The EPA 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, CH_4 and other non-CO_2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The EPA 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.

The EPA gained authority to regulate GHG emissions through the Clean Air Act (CAA) in the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). In 1999, 12 states petitioned the EPA to regulate GHGs from new motor vehicles, and the Supreme Court ruled that GHGs meet the definition of air pollutants under the CAA. Since GHGs pose a threat to public health and welfare, six GHGs are now regulated under the CAA (Center for Climate and Energy Solutions, 2017).

In 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal CAA. The EPA adopted a Final Endangerment Finding for the six defined GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6). The Endangerment Finding was required before the EPA could regulate GHG emissions under Section 202(a)(1) of the CAA. The EPA also adopted a Cause or Contribute Finding in which the EPA 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.

The sections of the CAA that are most applicable to the proposed project include Title I (Air Pollution Prevention and Control), Title II (Emission Standards for Mobile Sources), and Title V (Permits).

Title I of the CAA requires establishment of the National Ambient Air Quality Standards (NAAQS), air quality designations, and attainment plan requirements for nonattainment areas. Each state is required to submit a state implementation plan to the EPA for areas in nonattainment for NAAQS. The state implementation plan, which is reviewed and approved by the EPA, must demonstrate how state and local regulatory agencies will institute rules, regulations, and/or other programs to achieve attainment of NAAQS.

Title II of the CAA contains a number of provisions regarding mobile sources, including requirements for reformulated gasoline, new tailpipe emission standards for cars and trucks, standards for heavy-duty vehicles, and a program for cleaner fleet vehicles.

Title V of the CAA requires an operating permit program for larger industrial and commercial sources that release pollutants into the air. Operating permits include information on which pollutants are being released, how much may be released, and what steps the source's owner or operator is required to take to reduce the pollutants. Permits must include plans to measure and report the air pollutants emitted.

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 EPA 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 CO_2 per mile by model year 2016, based on EPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through2025 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 CO_2 per mile. According to the EPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle. In 2017, the EPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025 (EPA 2018). In August 2018, the EPA and NHTSA proposed the Safer Affordable Fuel-Efficient Vehicles Rule that would maintain the CAFE and CO_2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO_2 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 CO_2 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 also excluded CO_2e emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for N_2O and CH_4 emissions) after model year 2020 (EPA and NHTSA 2019). In September 2019, the NHTSA and EPA established the One National Program Rule, which withdrew California's waiver of preemption under Section 209 of the Clean Air Act, and finalized NHTSA's regulatory text relating to preemption under 49 USC 32919 (NHTSA 2020). In March 2020, the NHTSA and EPA finalized the CAFE and CO_2 emissions standards model for 2021–2026 for passenger cars and light trucks. The final rule will increase stringency of CAFE and CO_2 emissions standards by 1.5%each year through model year 2026, as

compared with the standards issued in 2012, which would have required about 5% annual increases. This is a change from the proposal issued in 2018 (NHTSA 2020).

Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium-and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6% to 23% over the 2010 baselines (EPA and NHTSA 2011). In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium-and heavy-duty trucks. The phase two program will apply to vehicles with 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 CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA 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 MT CO_2e emissions per year (EPA 2011). 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

The EPA mandated to apply Prevention of Significant Deterioration requirements to facilities whose stationary source CO2e emissions exceed 75,000 tons per year (EPA 2010). The project would not be expected to trigger Prevention of Significant Deterioration 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 Code of Federal Regulations (CFR) Parts 1039, 1065, and 1068, include multiple tiers of emission standards. Most recently, the EPA 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 (EPA 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% 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 MMT CO_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% below 1990 levels.

Executive Order B-30-15 sets a target date of 2030 to reduce GHG emissions to 40% 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, AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5–California Global Warming Solutions Act of 2006) focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 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, and is required to adopt rules and regulations directing State actions that would reduce GHG emissions to 1990 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% 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). CAR

revised the projected statewide 2020 emissions estimate of 509.4 MMT CO_2e using the GWP values from the Intergovernmental Panel on Climate Change AR4 509.4 MMT CO_2e (CARB 2014b). Therefore, the emission reductions necessary to achieve the 2020 emissions target of 431 MMT CO_2e would be 78.4 MMT CO_2e, or a reduction of GHG emissions by approximately 15.4%. In 2017, the 2017 Scoping Plan established a 2030 GHG reduction target of 40% emissions reductions below 1990 levels (CARB 2017).

Senate Bill 97

SB 97 was enacted requiring the California Governor's Office of Planning and Research to develop guidelines for the mitigation of GHG emissions, or the effects related to releases of GHG emissions. The Office of Planning and Research 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, which require a 7% to 8% reduction by 2020 and a 13% to16% reduction by 2035, for each Metropolitan Planning Organization. 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, Metropolitan Planning Organizations, such as the Kern Council of Governments (COG), 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. Kern COG's reduction target for per capita vehicular emissions is 5% by 2020 and 10% by 2035 (CARB 2010).

Kern COG 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.

Assembly Bill 1493

In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

California Green Building Standard Code

In addition to the California Energy Commission's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards

Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- 65% of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements; stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 75% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission (CPUC), California Energy Commission, and CARB also have a shared, established goal of achieving zero net energy (ZNE) for new construction in California. The key policy timelines include: (1) all new residential construction in California will be ZNE by 2020, and (2) all new commercial construction in California will be ZNE by 2030. It is expected that achievement of the ZNE goal will occur via revisions to Title 24, California Building Energy Efficiency Standards (CPUC 2013)

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% by 2020 and 50% 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% of retail sales by the end of 2024, 52% by the end of 2027, and 60% by the end of 2030; and that CARB should plan for 100% eligible renewable energy resources and zero-carbon resources by the end of 2045. The CPUC and the California Energy Commission 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 the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the State that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources by 2045 does not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Senate Bill 1368

SB 1368 requires the CPUC to establish a baseload generation standard for publicly owned or leased facilities which generate electricity at a GHG Emissions Performance Standard (EPS) of 1,100 pounds ofCO2e 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 Emissions Performance Standard.

Advanced Clean Cars Program

In 2002, the California legislature adopted regulations to reduce GHG emissions in the transportation sector, the state's largest source of GHG emissions. In September 2004, pursuant to AB 1493, CARB approved regulations to reduce GHG emissions from new motor vehicles beginning with the 2009 model year. In September 2009, CARB adopted amendments to the Pavley regulations to reduce GHGs from 2009 to 2016.

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 (CARB2019c). 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% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and NHTSA, has adopted new GHG standards for model year 2017 to 2025vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufactures 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 Kern COG 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. The Kern COG serves as the federally designated metropolitan planning organization for Kern County. With respect to air quality planning and other regional issues, the Kern COG 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% per capita reduction and the 2035 target is a 10% 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 SB375 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

San Joaquin Valley Air Pollution Control District

The SJVAPCD does not regulate GHG emissions directly through its permitting responsibilities for stationary sources. The SJVAPCD, however, can have an impact on GHGs from new and modified stationary sources when acting as a lead agency for CEQA. The SJVAPCD implements its GHG policies and reviews whether new or modified stationary sources will implement best performance standards (BPSs).

In 2009, the SJVAPCD developed an internal policy and guidance for local land use agencies to use in evaluating GHG impacts under CEQA. In the Final Staff Report – Addressing GHG Emissions Impacts under the California Environmental Quality Act (SJVAPCD 2009a), the SJVAPCD reviewed potential GHG significance thresholds and approaches suggested by or adopted by the following entities, ranging from quantification of a project's GHG impacts without a recommended significance threshold to a zero threshold to specific significance thresholds for different kinds of projects (e.g., residential, mixed use, industrial, plans):

- CARB – "Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act"
- California Governor's Office of Planning and Research – "Technical Advisory – CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review and Preliminary Draft CEQA Guideline Amendments for Greenhouse Gas Emissions and Public Workshop Announcement
- California Air Pollution Control Officers Association (CAPCOA) – CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act
- Association of Environmental Professionals – Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents
- South Coast Air Quality Management District – Draft Guidance Document – Interim CEQA GHG Significance Threshold
- Bay Area Air Quality Management District – Draft revisions to California Environmental Quality Act Air Quality Guidelines
- Sacramento Metropolitan Air Quality Management District – Addressing Climate Change in CEQA Documents

These documents encompassed the primary approaches for establishing significance thresholds in the period prior to the March 18, 2010 effective date of revisions of the CEQA Guidelines in accordance with SB 97. Additional guidance regarding assessment of GHG impacts were provided in the revised CEQA Guidelines and accompanying Final Statement of Reasons for Regulatory Action - Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97 (CNRA 2009a). In addition, the California appellate courts and the Supreme Court have more recently considered CEQA cases and, in some cases, issued published decisions that provide additional direction regarding the appropriateness of certain GHG assessment methodologies and significance thresholds.

The following discussion summarizes the SJVAPCD's conclusions about various categories of GHG significance thresholds.

Zero Threshold. The SJVAPCD concluded, "Although a zero threshold is appealing in its simplicity; execution of a zero threshold would be difficult or impossible" (SJVAPCD 2009a). Furthermore, the SJVAPCD found that projects that could not reduce their emissions to zero would require preparation of an EIR and adoption of a statement of overriding consideration by the lead agency. Potentially, projects could choose to relocate to a region with a less stringent threshold, so-called "leakage" that would still result in GHG emissions outside the SJVAPCD. Finally, the SJVAPCD noted that CARB concluded that zero thresholds are not mandated because some level of GHG emissions is still consistent with climate stabilization and other regulatory programs will result in GHG reductions. For these reasons, the SJVAPCD did not support a zero threshold. Accordingly, a zero threshold was not selected as an appropriate GHG/climate change threshold for this assessment.

Non-Zero Quantitative Thresholds. As indicated previously, the SJVAPCD reviewed numerous quantitative thresholds adopted or proposed by other air districts and organizations, including "mass of GHG emissions generate per unit of activity, GHG emissions per capita per unit basis, and percent reduction compared to Business-as-Usual" (SJVAPCD 2009a). While a tiered approach was evaluated, with the final tier incorporating a quantitative threshold, the SJVAPCD concluded that "without supporting scientific information, establishment of tier trigger levels could be argued to be arbitrary, and district staff does not believe the available science supports establishing a bright-line threshold, above which emissions are significant and below which they are not (SJVAPCD 2009a).

More specifically, the SJVAPCD concluded that inadequate evidence exists to support a specific quantitative level (e.g., a number of MT CO_2e per year that would be emitted due to a project) representing a significant impact. Specifically, the Final Staff Report states:

> *District staff has reviewed the relevant scientific information and concludes that the existing science is inadequate to support quantification of the extent to which project specific GHG emissions would impact global climatic features such as average air temperature, average annual rainfall, or average annual snow pack. Thus, District staff concludes that it is not feasible to scientifically establish a numerical threshold that supports a determination that GHG emissions from a specific project, of any size, would or would have a significant impact on global climate change. In other words, the District was not able to determine a specific quantitative level of GHG emission increase, above which the project would have a significant impact on the environment, and below which would have an insignificant impact. District staff further concludes that impacts of project specific emissions on global climatic change are cumulative in nature, and the significance thereof should be examined in that context. This is readily understood when one considers that global climatic change is the result of the sum total of GHG emissions, both man made [sic] and natural that occurred in the past; that is occurring now; and will occur in the future (SJVAPCD 2009a).*

Accordingly, a bright-line numerical threshold was not selected as an appropriate GHG / climate change threshold for this assessment.

Best Performance Standards. The SJVAPCD evaluated performance-based standards, which would state "in quantifiable terms the level and extent of the attribute necessary to reach a goal or objective." (SJVAPCD). The SJVAPCD considered a project achieving the performance-based standard or mitigating GHG emissions to an equivalent emission reduction level would be considered to have a less-than-significant cumulative impact on climate change. In conclusion, the SJVAPCD found that the state's GHG emission reduction target would be accomplished by achieving a 29% reduction from business as usual

(BAU) and that achieving this reduction would be a "de facto" performance-based standard for GHG emission reductions.

On December 17, 2009, the SJVAPCD Governing Board adopted Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009c). The guidance recommends the following hierarchy for evaluating a project's impact with respect to its GHG emissions:

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement best performance standards (BPS).
- Projects implementing BPS would not require quantification of project specific GHG emissions. SJVAPCD guidance recommends, "Projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions." This assessment for the project does include quantification of the project's construction and operational GHG emissions. Consistent with the state CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing BPS would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to BAU, including GHG emission reductions achieved since the 2002–2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG (SJVAPCD 2009c).
- For development projects, BPS would include project design elements, land use decisions, and technologies that reduce GHG emissions. While the SJVAPCD has adopted BPS for several types of stationary sources (e.g., boilers), it has not developed BPS for land development projects. Projects implementing any combination of BPS, and/or demonstrating a total 29% reduction in GHG emissions from BAU, would be determined to have a less than significant individual and cumulative impact on global climate change (SJVAPCD 2015).

Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan provides goals, policies, and implementation measures applicable to air quality, and as related to the project, would also reduce project GHG emissions. These goals, policies, and implementation measures are provided below (County of Kern 2009). 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.

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

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:

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.

Measure J: The County should include PM_{10} 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.

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

The project's potential impacts to GHGs have been evaluated using a variety of resources, including the Air Quality and Greenhouse Gases Study for the Sandrini Solar Project, Kern County, California (Appendix C of this EIR and incorporated by reference herein). 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 and SJVAPCD's 2015 Guidance for Assessing the Mitigation Air Quality Impacts (SJVAPCD 2015). Relevant literature was also consulted in preparation of this analysis including information and guidelines by CARB, the EPA, and the applicable provisions of CEQA. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described in the Thresholds of Significance section, below.

Construction and Decommissioning

Project generated construction emissions of GHGs were quantified using CalEEMod and applicant supplied information. Mobile-source emissions were modeled using EMFAC 2017 based on the estimated daily vehicle trips and vehicle miles traveled that would result from construction activities from vendor and hauling trips.

The combustion of diesel and gasoline in construction equipment generates GHGs. CalEEMod was used to calculate the GHG emissions from construction equipment for the project. The construction equipment type, usage hours and engine horsepower were based on information provided by the SJVAPCD for each project phase. Emission factors, and load factors for each type of equipment was based on CalEEMod default values to calculate emissions.

The project has a tentative life of 35 years. At which time the operations can be renewed and onsite technology updated, or the project could be decommissioned. As decommissioning activities would be similar to the construction activities (using the same types of equipment and same general activities), the quantified emissions from construction are used as a surrogate for decommissioning activities. However, it would be anticipated that the decommissioning activities would be reduced from those estimated for the construction activities as the efficiencies of the construction equipment and on-road vehicles would be consistent with the future decommissioning year, which would require full compliance with stringent emissions standards for heavy-duty construction equipment resulting in anticipated substantial reductions in emissions from what is presented for construction activities.

Operations

Long-term (i.e., operational) regional emissions of GHGs were quantified using the CalEEMod and EMFAC 2017. Mobile-source emissions were modeled with EMFAC 2017 and AP-42 emission factors based on the increase in daily vehicle trips and the vehicle miles traveled that would result from maintenance activities. CalEEMod was utilized to calculate GHG emissions from area and energy sources associated with the operation and maintenance building.

Energy Sources

The estimation of operational energy emissions was based on electricity consumption for the on-site &M building. This consumption was based on CalEEMod default energy use assumptions for the warehouse land use. CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kilowatt-hour) for PG&E are based on the value for PG&E's energy mix in 2008, the latest year provided in the model.

Mobile Sources

All details for criteria air pollutants emissions estimates methodology discussed in Section 4.3, *Air Quality*, are also applicable for the estimation of operational mobile source GHG emissions. Regulatory measures

related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. In addition, the NHTSA and EPA have established corporate fuel economy standards and GHG emission standards, respectively, for automobiles and light-duty, medium-duty, and heavy-duty vehicles. Implementation of these standards and fleet turnover (i.e., replacement of older vehicles with newer ones) will gradually reduce emissions from the Project's motor vehicles. In addition, the Low Carbon Fuel Standard calls for a 10% reduction in the "carbon intensity" of motor vehicle fuels by 2020. The project would have mobile source emissions generated from the maintenance vehicles travelling to and from the site. Estimated activity data from the applicant and the EMFAC 2017 were used to calculate emissions from this source category.

Solid Waste

The project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste. Solid waste would be generated through maintenance activities and the on-site control building.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the proposed project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. The associated electricity consumption from water use and wastewater generation and emissions were estimated using CalEEMod. CalEEMod defaults values for water consumption of both indoor and outdoor water use were used.

Thresholds of Significance

The following criteria, as established in CEQA Guidelines Appendix G, were used to determine if the 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. CARB developed statewide interim thresholds of significance in 2008. For industrial projects, CARB proposed a quantitative threshold of 7,000 MT CO_2e per year (CARB 2008). 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 *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 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 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*. Construction of the project is anticipated to commence in January 2022 and reach completion at the end of December 2022, lasting a total of 12 months. 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). Table 4.8-2, *Estimated Annual Construction Greenhouse Gas Emissions*, presents construction emissions for the project from on-site and off-site emission sources.

TABLE 4.8-2: ESTIMATED ANNUAL CONSTRUCTION GREENHOUSE GAS EMISSIONS

	CO_2	CH_4	N_2O	CO_2e
Year	**Metric Tons per Year**			
2022	2,928	0.73	0.09	2,975
	Amortized Emissions over 30 Years			*99*

NOTES: CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; N_2O = nitrous oxide.
See Appendix A for complete results.

As shown in Table 4.8-2, the estimated total GHG emissions during construction of would be approximately 2,975MT CO_2e in 2022. Estimated project-generated construction emissions amortized over 30 years would be approximately 99 MT CO_2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature,

lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. As shown below, amortized construction emissions were added to the annual operational emissions as provided in Table 4.8-3, *Estimated Annual Operational Greenhouse Gas Emissions*.

Operational Emissions

Operation of the project would generate GHG emissions through motor vehicle trips to and from the project site; energy use (electricity consumed by the project, as required when the project is not powered by on-site energy generation); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. CalEEMod and EMFAC 2017 were used to calculate the annual GHG emissions based on the operational assumptions described in Section 4.8.4, *Impacts and Mitigation Measures,* under the subheading *Methodology*.

The estimated operational (year 2023) project generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage and wastewater generation are shown in Table 4.8-3.

TABLE 4.8-3: ESTIMATED ANNUAL OPERATIONAL GREENHOUSE GAS EMISSIONS

	CO_2	CH_4	N_2O	CO_2e
Emission Source	**Metric Tons per Year**			
Area	<0.01	0.00	0.00	<0.01
Energy	22.18	<0.01	<0.01	22.28
Mobile	21.26	<0.01	<0.01	21.60
Waste	1.14	0.06	0.00	2.84
Water	2.62	0.05	<0.01	4.08
Total	**28.2**	**0.11**	**<0.01**	**50.80**
	Amortized Construction Emissions over 30 Years			*99*
Operation + Amortized Construction Total				150
GHG reductions from Solar Energy Generation				239,575
Net GHG reduction				239,425

NOTES: CH_4 = methane; CO_2 = carbon dioxide; CO_2E = carbon dioxide equivalent; N_2O = nitrous oxide
See Appendix A for complete results.

As shown in Table 4.8-3, estimated annual project generated GHG emissions would be approximately 51 MT CO_2e per year as a result of project operation. Estimated annual project-generated operational emissions and amortized project construction emissions would be approximately 150 MT CO_2e per year. After accounting for reductions from solar energy generation at the project site, the project would result in a net reduction of 239,425 MT CO_2e per year.

The project would generate a maximum of 300 megawatts of electricity at any one time, which would serve to displace GHG emissions generated from fossil fuels and, thus, assisting in the attainment of the State's goal to reduce statewide GHG emissions. Therefore, operation of the project would result in a net reduction in GHG emissions, even when accounting for the minimal operational GHG emissions generated by the project resulting from operation and maintenance employee trips, the O&M building operations, and intermittent maintenance activities.

Given that the project would result in a net decrease of CO_2e emissions, impacts related to the generation of GHG emissions, either directly or indirectly, would be considered less than significant.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Impacts would be 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 gases.

Consistency with the Kern COG's 2018 Regional Transportation Plan/Sustainable Communities Strategy

As discussed under the subheading *Environmental Setting*, Kern County does not have an applicable GHG reduction plan. Under the SJVAPCD's CEQA thresholds for GHG, a project would not have a significant GHG impact if it is consistent with an applicable plan to reduce GHG emissions, and a CEQA-compliant analysis was completed for the GHG reduction plan. Kern COG's RTP/SCS is an applicable plan adopted for the purpose of reducing GHGs from the land use and transportation sectors in Kern County, and was adopted after completion of a Programmatic EIR. CARB approved the RTP/SCS in 2019. The project could result in a significant impact due to a conflict with an applicable plan, policy or regulation if it would be inconsistent with the adopted Kern COG RTP/SCS. Therefore, the project could have a potential conflict with the RTP/SCS if it were to be found inconsistent based on a qualitative assessment of the project's consistency with Kern COG's SCS policies. As discussed in Appendix C, the proposed project would require a general plan amendment and zone change, however the resulting increase and in employment for the project (6 long-term jobs and up to 500 temporary jobs) the project would not exceed the KCOG 2018 RTP/SCS growth forecast for the region. Therefore, the project would be consistent with the KCOG 2018 RTP/SCS. The 2018 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2018 RTP/SCS is not directly applicable to the project because the underlying purpose of the 2018 RTP/SCS is to provide direction and guidance by making the best transportation and land use choices for future development, though the project would not conflict with the goals and policies of the 2018 RTP/SCS. Additionally, the project would not impact local transportation and land use during operation.

Consistency with CARB's Scoping Plan

As discussed in Section 4.8.3, *Regulatory Setting*, the Scoping Plan (approved by CARB on December 12, 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific projects. Relatedly, in the Final Statement of Reasons for the Amendments to the CEQA Guidelines, the CNRA observed that "[t]he [Scoping Plan] may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009b). Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state

agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., LCFS), among others.

The project would not impede and may help the attainment of the GHG reduction goals for 2030 or 2050 identified in EO S-3-05, SB 100 and SB 32. EO S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 100 establishes that 44% of the total electricity sold to retail customers in California per year b December 31, 2024, 52% by December and 31, 2027 and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 32 establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014):

> *This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.*

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the Second Update, which states (CARB 2017):

> *The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197.*

The project would not interfere with implementation of any of the previously described GHG reduction goals for 2030 or 2050 because the project would result in a net reduction in GHG emissions after accounting for onsite solar energy production. Because the project would result in a net reduction in GHG emissions, this analysis provides support for the conclusion that the project would not impede the state's trajectory toward the previously described statewide GHG reduction goals for 2030 or 2050.

In addition, as discussed previously, the project is consistent with the GHG emission reduction measures in the Scoping Plan and would not conflict with the state's trajectory toward future GHG reductions. In addition, since the specific path to compliance for the state in regards to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the project would be speculative and cannot be identified at this time. The project's consistency would assist in meeting the County's contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32, SB 100 and EO S-3-05, CARB has also made clear its legal interpretation is that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030, SB 100's 100% by 2045 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. The project would create renewable energy production and thus would support the goals within SB 32, SB 100, and EO S-3-05. Based on the considerations previously outlined, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. This impact would be less than significant.

Other Federal/State/Local Policies

Table 4.8-4**,** *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 Table 4.8-4, 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.

TABLE 4.8-4: 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_2e operating emissions that are 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_2e operating emissions that are below the 75,000 ton/year rule trigger.
State		
SB 1368. Emissions Performance 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.

TABLE 4.8-4: PROJECT CONSISTENCY WITH AN APPLICABLE PLAN, POLICY, OR REGULATION FOR GHG EMISSIONS

Adopted Plan, Policy, or Regulation	Consistency Determination	Project Consistency
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.

SOURCE: ESA 2020.

Overall, because the main objectives of the project are to construct and operate a solar energy generation facility with energy storage capabilities to help California advance its RPS and energy storage goals, 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, 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 would not be applicable to the project, since they are more appropriate and applicable measures to reduce long-term operational GHG emissions.

The impacts on global warming and 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 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 300 megawatts, 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. Impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Impacts would be less than significant.

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, it is 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 emissions to 1990 levels 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 CARB, 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 less than significant GHG impacts.

Total GHG emissions of 248 MT CO_2e per year for the project are shown in Table 4.8-3, *Estimated Annual Operational Greenhouse Gas Emissions*. The main contribution of GHG emissions from the project would be from construction equipment usage during the construction and decommissioning phases and motor vehicles trips by employees and maintenance vehicles during project operations. Transportation sources account for 40% of California's total GHG emissions (CARB 2019a). The project's emissions 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 short-term contribution to cumulative GHG emissions in California, operation of the project would offset emissions from the electricity generation sector by reducing emissions by approximately 239,425 MT CO2e per year. As such, the long-term cumulative effect that would be associated with the project would be beneficial.

Overall, the project 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. As analyzed above, the project would be consistent with the State's applicable GHG reduction goals, plans, policies, and regulatory requirements as well as other federal, state, and local policies, including the CARB Climate Change Scoping Plan. The nature of solar projects, including the project, is such that they would be consistent with the strategies of the Climate Change Scoping Plan. To meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the RPS target of 33% of California's energy coming from renewable sources by 2020 and 50% by 2030. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Climate Change Scoping Plan relies on achievement of the RPS target of 50% of California's energy coming from renewable sources by 2030. As previously discussed, the RPS target was updated in September 2018 under SB 100 to 60% by 2030.

Based on the above, the project is presumed to have less-than-significant GHG impacts. 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 operational GHG emissions would be offset and no mitigation is required, any other feasible reductions would be accomplished through CARB regulations adopted pursuant to AB 32. Cumulative impacts of the project on global climate change would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Cumulative impacts would be less than significant.

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4.9 Hazards and Hazardous Materials

4.9.1 Introduction

This section describes the existing hazardous materials conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. The analysis is based in part from the Phase I Environmental Site Assessment Report completed for the project site, provided as Appendix J of this EIR, as well as publicly available information from the California Department of Forestry and Fire Protection (CAL FIRE).

4.9.2 Environmental Setting

This section discusses the existing conditions related to hazards and hazardous materials in the project area and describes the environmental setting for hazardous materials and waste, airports, electromagnetic fields (EMFs), noise (also addressed in Section 4.13, Noise, of this EIR), wildfires (also addressed in Section 4.18, *Wildfire*, of this EIR). Residences and other sensitive receptors such as schools are also described as their proximate location to the project site affect their exposure to the potential hazards described below. A description of the project site relative to hazards and hazardous materials can also be found below.

Existing Setting

The project site consists of approximately 3,470 acres of mostly vacant scrubland and paved/unpaved roads. Existing land uses surrounding the project site consist largely of agricultural parcels sparsely occupied by farm or rural residential uses. The primary zoning classification in the 5-mile radius surrounding the project site is A (Exclusive Agriculture). There are several rural residences located in the immediate vicinity of the project site: the first residential home is located immediately adjacent to Site 4, south of Copus Road. The second residential home is located immediately adjacent to Site 2, located west of Old River Road. The third residential home is located north of Copus Road, approximately 0.40 miles east of project Site 3.

There are no schools within 5 miles of the proposed project site. The nearest school is Arvin High School, located approximately 17 miles northeast at 900 Varsity Road, Arvin, California 93203.

The nearest private airport is the Skydive San Joaquin Valley Airport, which directly borders the eastern boundary of the project (Site 3). The nearest public use airport is the Bakersfield Municipal Airport, located at 2000 South Union Avenue, Bakersfield, California 93307, approximately 18 miles north of the proposed project site, and the Taft-Kern County Airport, located approximately 20 miles northwest. Interstate 5 (I-5), the nearest highway, is located approximately 0.6 miles east of the project site at its closest point.

Historical Property Use

The project site is located in the San Joaquin Valley which has a long history of agricultural uses including the vicinity of the project site. According to the Phase I Report (Appendix J), the historical land uses of the site has been relatively similar to the current land use; the site and surrounding areas appear to have been undeveloped land prior to 1942.

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.

As mentioned above, the Phase I ESA was performed to identify and characterize known and potential environmental concerns that may exist on the project site. The Phase I ESA included a review of disclosed landowner information, current/historic site uses, surrounding property uses, an environmental regulatory records search, and site visit. This ESA made the following finding about the subject properties, which is described in greater detail within the Phase I technical report, Appendix J.

A large agricultural facility is located in proximity to Site 4 of the project site on APN 445-062-01. This facility stores farming chemicals and petroleum products in bulk in large storage tanks. There have been several regulatory storage and reporting violations associated with these tanks. Given the bulk storage of hazardous materials in tanks at the facility and the containment system, there is potential for contaminants to migrate to the project site via groundwater or surface water.

Photovoltaic Solar Panels and Cadmium Telluride

The photovoltaic (PV) solar panels that would be installed on the project site would be selected from those commercially available and thus are most likely made from polycrystalline silicon or thin-film technology. Polycrystalline silicon PV panels may include small amounts of solid materials that are considered to be hazardous. Because such materials are in a solid and non-leachable state, broken polycrystalline silicon PV panels would not be a source of pollution to surface water, stormwater, or groundwater. Polycrystalline silicon panels removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility.

The thin-film PV solar modules that could be installed on the project site use Cadmium Telluride (CdTe) technology. The semiconductor layer in the modules 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. Because of optimal optical properties, only a 3-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 NiCd battery.

It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil (Fthenakis, 2003). 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.

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, CdTe PV modules do not present an environmental risk. CdTe releases are also unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe (Fthenakis, 2003). 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 CdTe module collection and recycling services. Since 2005, the 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.

Electromagnetic Fields

Commonly known human-made sources of EMF are electrical systems, such as electronics and telecommunications, as well as electric motors and other electrically powered devices. Radiation from these sources is invisible, non-ionizing, and of low frequency. Generally, in most environments, the levels of such radiation added to natural background sources are low.

Electric voltage (electric field) and electric current (magnetic field) from transmission lines create EMFs. Power-frequency EMF is a natural consequence of electrical circuits and can be either directly measured using the appropriate measuring instruments or calculated using appropriate information.

The power generated from the site would ultimately connect to the existing PG&E Wheeler Ridge Substation. The alignment is discussed further in more detail in Chapter 3, Project Description, of this EIR.

On January 15, 1991, the California Public Utilities Commission (CPUC) initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines. A working group of interested parties, the California EMF Consensus Group, was created by the CPUC to advise it on this issue. The California EMF Consensus Group's fact-finding process was open to the public, and its report incorporated public concerns. Its recommendations were filed with the CPUC in March 1992. Based on the work of the California EMF Consensus Group, written testimony, and evidentiary hearings, CPUC's decision (93-11-013) was issued on November 2, 1993, to address public

concern about possible EMF health effects from electric utility facilities. The conclusions and findings included the following:

> *"We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure. We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value."*

This continues to be the stance of the CPUC regarding standards for EMF exposure. Currently, the state has not adopted any specific limits or regulations regarding EMF levels from electric power facilities.

The project includes the installation of two gen-tie lines that would interconnect new project switchyards to on-site and off-site substations. The gen-tie lines would run up to 11 miles from the proposed on-site collector substations to the existing PG&E Wheeler Ridge Substation. The project intends to route the gen-tie lines within public right-of-ways and through easements across private lands.

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) that 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 PV panels mounted on aluminum and steel support structures. The support structure shave 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, light weight 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 increase ambient air temperatures at or around 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).

Increased Noise

Noise from construction would be temporary over a period of 12 to 18 months. The ambient noise regime in the project vicinity consists of undeveloped and agricultural uses, and is a relatively quiet noise environment. The nearest sensitive noise receptors to the project are isolated residential land uses, with the nearest located adjacent to the project site. Due to the relatively quiet noise environment in the project area associated with the current undeveloped and agricultural land uses, temporary or periodic increases in ambient noise levels caused by construction activities could occur near the project site.

As discussed further in Section 4.13, Noise, of this EIR, the nearest sensitive receptors to the project are residences approximately 150-300 feet from the project site. Section 4.13 of the EIR considers temporary nighttime construction noise impact to residences in the project vicinity.

Hazardous Materials Transportation

The project site is located near three 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 to the project site from the north and the south directions. State Route 166 (SR-166) intersects with I-5 and State Route 99 (SR-99) and runs east of Site 4 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.

Airports

The nearest private airport is the Skydive San Joaquin Valley Airport, which directly borders the eastern boundary of the project (Site 3). The nearest public use airports are the Bakersfield Municipal Airport, located at 2000 South Union Avenue, Bakersfield, California 93307, approximately 18 miles north of the project site, and the Taft-Kern County Airport, located at 468 Airport Road, Taft, California 93308, approximately 20 miles northwest of the project site. The project site is not located within any safety or noise contour zones for these airports, nor is the project site located within any designated airport land use plan areas.

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 Fire Department 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 covered by vegetation and not within an area identified by the California Department of Forestry and Fire Protection as having substantial or very high fire risk, as determined by the Kern County General Plan or CAL FIRE (Kern County 2009 and CAL FIRE 2007).

4.9.3 Regulatory Setting

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) was established in 1970 to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The USEPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. The USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for using permits and for monitoring and enforcing compliance. Where national standards are not met, the USEPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of1976 (RCRA) established a program administered by the USEPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. 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.

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," were enacted by Congress on December 11, 1980. This law (42 United States Code[USC] 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, Code of Federal Regulations [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.

Clean Water Act/Spill Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC 1251 et seq., formerly known as the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. As part of the CWA, the USEPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement spill

prevention, control, and countermeasure (SPCC) plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the United States.

Other Regulations

Other federal regulations overseen by the USEPA 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 the CWA; 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.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration's (OSHA's) mission is to ensure the safety and health of U.S. workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. The OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910, which include preparation of Health and Safety Plans (HASPs). HASPs identify potential hazards associated with a proposed land use and may provide appropriate mitigation measures as required. 29 CFR Section1910.120(e) requires all employees working on site exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management responsible for the site to receive training meeting the requirements of this paragraph before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards. These employees shall receive any necessary review training.

State

California Department of Conservation, Geologic Energy Management Division

CalGEM, formerly DOGGR, is the State agency responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. CalGEM's regulatory program promotes the sensitive development of oil, natural gas, and geothermal resources in California through sound engineering practices, pollution prevention, and the implementation of public safety programs. CalGEM requires any construction above or near plugged or abandoned oil and gas wells to be avoided, and remediation of wells to meet current CalGEM standards, including wells discovered during excavation or grading.

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:

> *GO 95: Rule 35, Tree Trimming, defines minimum vegetation clearances around power lines. Rule35 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 230-kiloVolt (kV) lines.*
>
> *GO 95: 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)

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.

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 10feet, 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 8 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 Hazardous Materials 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. A Hazardous Materials Business Plan must be submitted to the local Certified Unified Program Agency (the Kern County Public Health Services Department/Environmental Health Division) if the facility handles, uses or stores a hazardous material or mixture containing a hazardous material that has a quantity equal to or greater than 55 gallons of liquid, 500 pounds of a solid substance, or 200 cubic feet of compressed gas, a hazardous compressed gas in any amount, or hazardous waste in any amount. A Hazardous Materials Business Plan must include the following:

- Inventory of hazardous materials at a facility;
- Emergency response plans and procedures in the event of a reportable release or threatened release of a hazardous material; and
- Training for all new employees and annual training for all employees in safety procedures in the event of a release or threatened release of a hazardous material (Cal OES, 2014).

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
- 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
- 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.

California Code of Regulations – Hazardous Substances

Under CCR Title 22, 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).*

CCR Title 8 (Chapter 3.2, Article 5, Section 339) includes a list of identified hazardous substances. Hazardous materials in various forms can cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property (DHS, 2016).

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, State Water Resource Control Board (SWRCB), Regional Water Quality Control Board, CalRecycle, DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation 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, Division4.5). 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, U.S. 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

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 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. Hazardous materials 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
- Hazardous waste in any quantity

California Occupational Safety and Health Administration

The 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 (8CCR 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 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
- 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 for hazards and hazardous materials 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 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.

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], MapCode 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.

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.

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.

4.10: Abandoned Open Shafts and Wells

In some areas of the County, there exist abandoned mine shafts that, if not secured, contribute to the injury of or fatality to unsuspecting members of the public. Many such shafts are within lands owned and controlled by various agencies of the Federal government.

Policies

Policy 1: The County should protect residents from the hazards of improperly abandoned mine shafts.

Policy 2: The County should protect residents from the hazards associated with development in areas where wells have been drilled and abandoned for exploration and/or production of oil and natural gas.

Implementation Measure

Measure B: Support the construction site review program of the Department of Oil, Gas and Geothermal Resources that ensures that wells are precisely located, properly plugged and abandoned, and tested for leakage prior to development of the area.

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.

Kern County Multi-Hazard Mitigation Plan

The latest Kern County Multi-Hazard Mitigation Plan was developed in 2014. The Plan was developed by a Hazard Mitigation Planning Committee and identifies goals, objectives and actions pertaining to mitigating impacts from identified natural hazards. Kern County along with 62 other participating jurisdictions, will develop an update to the 2012-14 Kern Multi-Jurisdiction Hazard Mitigation Plan to reduce losses resulting from natural disasters. The goal of the planning effort is to revisit natural hazard information to account for changes in population and occurrences of natural disaster in the planning area.

This effort would include assistance in reduction of repetitive damages to community infrastructure, and the County will maintain eligibility for grants under the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance program. A public draft of the 2020 Plan is now available for review in the County website. The public at large has 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. Hazard mitigation is the use of sustained, long-term actions to reduce the loss of life, personal injury, and property damage that can result from a disaster. By following FEMA guidelines for approval of this plan, Kern County can be eligible for grant funding intended for mitigation projects (KCFD, 2020).

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 2016 California Fire Code and the 2015 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 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.

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, 2019c).

Kern County Department of Environmental Health Services Division

The County of Kern Environmental 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.

Kern County Zoning Ordinance

The Kern County Zoning Ordinance has regulations regarding maximum permitted heights, both within specific zone districts and in districts with the H (Airport Approach Height) Combining District. The purpose of the H Combining District is to minimize aviation hazards by regulating land uses, restricting the height of buildings and vegetation, and specifying design criteria necessary to promote aviation safety. Structure height is restricted to prevent aesthetic impacts and to provide privacy for neighboring properties. Height limits are also established for structures within the Joint Service Restricted R-2508 Complex (which is part of a Special Use Airspace) that require written concurrence from the military authorities responsible for operations in the area.

4.9.4 Impacts and Mitigation Measures

Methodology

Potential impacts to hazards and hazardous materials as a result of project implementation have been evaluated using a variety of resources, including the Phase I Environmental Site Assessment Report and information compiled by CAL FIRE. The proposed project was evaluated for adequate accessibility for emergency responders based on the project location, construction plans, and site plans, and any potential alterations to existing evacuation routes and plans. 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. 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 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 involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 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 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 and would result in a safety hazard for people residing or working in the project area;

f. For a project located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area;

g. Impair implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan;

h. 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; or

i. 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 well-being of the majority of the surrounding population.

The lead agency determined in the Notice of Preparation/Initial Study (NOP/IS), located in Appendix A of this EIR, that the proposed project would not result in significant impacts to some of these environmental issue areas, and that no further analysis would be required in the EIR. Thus, the following issue areas are scoped out of further analysis in this EIR:

c. Emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;

f. For a project within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area;

i. 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 well-being of the majority of the surrounding population.

As discussed in the IS/NOP, there are no schools located within a quarter mile of the project site, which would not have any substantive emissions anyway. The project site is not located within 2 miles of a public or private airstrip and, therefore, would not result in a safety hazard for people residing or working in the project area. Project-related facilities would not result in features or conditions that could potentially provide habitat for vectors such as mosquitoes, flies, cockroaches, or rodents. During construction and operation, workers would generate small quantities of solid waste (i.e., trash, food containers, etc.) that would be stored in enclosed containers, then transported to and disposed of at approved disposal facilities. Construction and operation of the proposed solar arrays and associated facilities would not produce uncontrolled wastes that could support vectors and would not generate any standing water or other features that would attract nuisance pests or vectors. Therefore, impacts are considered to be negligible and further analysis is not required.

No further analysis for these issues areas is warranted in the EIR.

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

Construction of the proposed project (solar facilities, collector substations, gen-tie lines, connection to existing Wheeler Ridge substation, and associated appurtenances) would not involve the routine transport, use, or disposal of substantive quantities of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. Most of the hazardous materials use and hazardous waste generated by the project would occur during the temporary construction period. Likely uses would include cleaning fluids, solvents, petroleum products, dust palliative, and herbicides. Some solid hazardous waste, such as welding materials and dried paint, may also be generated during construction. These materials would be transported to the project site during construction, and any hazardous wastes that are produced as a result of project construction would be collected and transported away from the site. During construction of the project, material safety data sheets for all applicable materials present at the site would be made readily available to onsite personnel in accordance with required BMPs as part of a Stormwater Pollution Prevention Plan (SWPPP) (see Section 4.10 *Hydrology and Water Quality*). Workers would be trained to properly identify and handle all hazardous materials. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped offsite for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location.

During construction of the facilities, non-hazardous construction debris would be generated and disposed of in local landfills. Sanitary waste would be managed using portable toilets located at a reasonably accessible onsite location. Mitigation Measure MM 4.9-1 would require debris and waste generated to be recycled to the extent feasible during construction, operation, and decommissioning and the designation of

a Recycling Coordinator to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes.

Hazardous materials such as petroleum fuels and lubricants used on field equipment would be subject to the Material Disposal and Solid Waste Management Plan, and SPCC plan and other measures to limit releases of hazardous materials and wastes (see further discussion of best management practice (BMP) requirements in Section 4.10, *Hydrology and Water Quality*, of this EIR). Recyclable materials including wood, shipping materials, and metals would be separated when possible for recycling. Liquids and oils in the transformer and other equipment would be used in accordance with applicable regulations. The disposal of all oils, lubricants, and spent filters would be performed in accordance with all applicable regulations including the requirements of licensed receiving facilities. Overall, the relatively limited use and small quantities of hazardous materials, and subsequently transport and disposal of such materials, during construction would be controlled through compliance with applicable regulations including the Kern County and Incorporated Cities Hazardous Waste Management Plan. As such, impacts during construction would be less than significant.

Operation

Operation and maintenance (O&M) activities associated with PV solar facilities are relatively minor when compared to conventional power plants or even other industrial land uses, and would require very limited use of hazardous materials and generation of hazardous waste. Any hazardous materials that would be used would be stored onsite and in designated areas in accordance with a Hazardous Materials Business Plan (see below). The project sites would be secured and enclosed by a fence surrounding each site to prevent public access to hazardous materials and the PV panels. The interconnection (power line) portions of the project would largely use previously approved gen-tie lines and these connections would not require use of hazardous materials during operation (see EMF discussion below).

Primary O&M activities that would occur on the project sites during operation would consist of panel washing but would also include without limitation: liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters; site security and management; additional communication protocol; and repair and maintenance of solar facilities and other project facilities. No heavy equipment would be necessary during normal project operation. O&M vehicles would include trucks (pickup, flatbed), forklifts, and loaders for routine and unscheduled maintenance, and water trucks for solar panel washing. Large heavy-haul transport equipment and cranes may be brought to the project site infrequently for equipment repair or replacement. Long-term maintenance and equipment replacement would be scheduled in accordance with manufacturer recommendations. Solar panels are warranted for 25 years or longer and are expected to have a life of 30 years or more. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would be conducted as necessary. Mitigation Measure MM 4.9-2, 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.

Although a specific model of PV modules has not yet been selected for the project, the PV modules to be installed on the project site could potentially utilize CdTe thin film technology. As described above in Section 4.9.2, *Environmental Setting*, CdTe is generally bound to a glass sheet by a vapor transport

deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material, and then encapsulating it in a second glass sheet. It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. The PV modules with CdTe thin film technology conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC61730 PV as tested by a third-party testing laboratory certified by the IEC. In addition, the PV modules also conform to Underwriters Laboratory (UL) 1703 a standard established by the independent product safety certification organization. In accordance with UL 1703, the PV modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and monitor performance. During normal operations, CdTe PV modules do not present an environmental risk (Fthenakis 2003). CdTe releases are also 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. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis, 2003). The project includes operational and maintenance protocols that would be used to identify and remove damaged or defective PV modules during annual inspections. The PV module manufacturer created the first global and comprehensive module collection and recycling program in the PV industry in 2005. Therefore, the use of a CdTe PV system would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during normal operations.

Environmental risks of both crystalline silicon and thin film CdTe PV technologies have been evaluated by the International Energy Agency, using U.S. Environmental Protection Agency (USEPA) fate and transport methods for potential emissions to air, water, and soil from non-routine events such as fire and field breakage. Based on comparisons with USEPA health screening levels, crystalline silicon and thin film CdTe PV technologies do not present a health risk in the event of fire or breakage, with regards to their use of lead and cadmium compounds, respectively (P. Sinha et al. 2018, 2019).

Project operations would require the use of transformer oil at the project substations and the energy storage system could contain battery acids, as well as lithium ion, lead acid, sodium sulfur, and sodium or nickel hydride. All transformers would be equipped with spill containment areas and battery storage would be in accordance with OSHA requirements such as inclusion of ventilation, acid resistant materials, and spill response supplies. All components would have a comprehensive SPCC plan, in accordance with all applicable federal, State, and local regulations. Dust palliatives and herbicides, if used during operations to control vegetation, may be transported to the project site. These materials would be stored in appropriate containers to prevent accidental release. I-5 would be the likely designated route for the transport of hazardous materials located east of project Site 4. In addition, implementation of Mitigation Measure MM 4.9-1 and MM 4.9-2, would further reduce impacts related to hazards to a less-than-significant level.

Further, implementation of the project would not result in the significant risk of EMFs associated with overhead power lines, as each facility would interconnect into an existing substation, PG&E's Wheeler Ridge Substation. To the extent commercially feasible, the project intends to utilize previously approved and/or existing interconnection facilities associated with other generating and transmission projects to minimize potential environmental impacts. In addition, the project would not construct sensitive uses under the existing lines but would adhere to applicable CPUC requirements on location of any gen-tie lines or gen-tie connections. As the State has not adopted any specific limits or regulations regarding EMF levels from electric power facilities, impacts in this regard would be less than significant.

Decommissioning and Disposal

During the decommissioning and disposal process, it is anticipated that all project structures would be fully removed from the ground. Above-ground equipment that would be removed would include electrical wiring, equipment on the inverter pads, and the interconnection transformer pad and associated equipment. Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment offsite. Removal of the PV modules would include removal of the racks on which the solar panels are attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility.

Once the PV modules have been removed, the racks would be disassembled, and the structures supporting the racks would be removed. All other associated site infrastructure would be removed, including fences, concrete pads that may support the inverters, transformers and related equipment, and underground conduit/electrical wiring. The fence and gate would be removed, and all materials would be recycled to the extent feasible. The area would be thoroughly cleaned and all debris removed. As discussed above, most panel materials would be recycled, with minimal disposal to occur in landfills in compliance with all applicable laws.

The PV module manufacturer would likely provide CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. 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. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis, 2003). These studies have consistently concluded that use of CdTe PV modules do not present an environmental risk.

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: https://www.seia.org/initiatives/seia-national-pv-recycling-program.

As discussed above, Mitigation Measure MM 4.9-1 would require that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The onsite recycling coordinator shall also be responsible for ensuring that wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal. The name and phone number of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. Given that the normal use and disposal of CdTe PV modules would not present an environmental risk, project implementation would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during decommissioning and disposal activities and impacts related to hazards from decommissioning would be reduced to a less-than-significant level.

Mitigation Measures

MM 4.9-1: 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. A Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Construction, Operation and 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 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 and decommissioning. A site plan showing the recycling storage area for construction shall be submitted prior to the issuance of any grading or building permit for the site.

MM 4.9-2: During the life of the project, including decommissioning, the project operator shall prepare and maintain a Hazardous Materials Business Plan, 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 at http://cers.calepa.ca.gov/ for review and acceptance by the Kern County Environmental Health Services Division/Hazardous Materials Section.

a. The Hazardous Materials Business Plan shall:

1. Delineate hazardous material and hazardous waste storage areas;

2. Describe proper handling, storage, transport, and disposal techniques, including which routes will be used to transport hazardous materials;

3. Describe methods to be used to avoid spills and minimize impacts in the event of a spill;

4. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction;

5. Establish public and agency notification procedures for spills and other emergencies including fires; and

6. Include procedures to avoid or minimize dust from existing residual pesticide and herbicide use that may be present on the site.

b. The project proponent/operator shall provide the Hazardous Materials Business Plan to all contractors working on the project and shall ensure that one copy is available at the project site at all times.

c. A copy of the approved Hazardous Materials Business Plan shall be submitted to the Kern County Planning and Natural Resources Department prior to issuance of a building permit.

Level of Significance after Mitigation

Impacts would be less than significant.

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

According to the Phase I Environmental Site Assessment Report (Appendix J), the project site is not located within a known oil production field, nor does the project site have any known active or abandoned oil wells. Therefore, construction and development of the proposed project is unlikely to expose employees or construction workers to the dangers associated with operating a facility near an oil well.

Potential impacts that may result from construction of the project includes the accidental release of materials, such as cleaning fluids and petroleum products including lubricants, fuels, and solvents. Implementation of Mitigation Measure MM 4.9-2, which would provide methods to be used to avoid spills and minimize impacts in the event of a spill by providing procedures for handling and disposing hazardous materials as well as public and agency notification procedures for spills and other emergencies including fires, would reduce this impact to a less-than-significant level.

Despite the relatively open spaces surrounding the different sites, nearby sensitive receptors could be exposed to pollutant emissions during construction of the project, resulting in a potentially significant impact. An adverse risk related to exposure to hazardous materials could result from the installation and use of transformers, grading of the site, the application of herbicides, or other construction or operation processes because of the distance between the sensitive receptors and the project site. Implementation of Mitigation Measure MM 4.9-3, which regulates the use of herbicides as described below, would reduce impacts related to sensitive receptors to a less-than-significant level.

Operation

The PV modules and inverters would produce no hazardous waste during operation. Each enclosed transformer at the substation would include mineral oil, but secondary containment would be provided in accordance with applicable federal, State, and local laws and regulations. The mineral oil contained in each transformer does not normally require replacement, and mineral oil disposal would be in accordance with all applicable federal, State, and local laws and regulations.

As stated in the environmental setting above, it has been demonstrated that standard operation of polycrystalline silicon PV systems does not result in pollution emissions to air, water, or soil. Polycrystalline silicon panels removed from the site would be recycled or otherwise disposed at an appropriate waste disposal

facility. Hazardous materials are unlikely to occur during accidental breakage of the polycrystalline silicon solar panels. Similarly, fire damage would not result in the release of hazardous materials (Fthenakis et al., 2003). The polycrystalline silicon PV panel does not pose a threat to nearby residences.

CdTe releases are unlikely to occur from accidental breakage of or fires involving the PV modules. CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low solubility in water, low vapor pressure, and a melting point greater than 1,000 degree Celsius (˚C). Potential impacts to soil, air, and groundwater quality from broken CdTe PV modules are highly unlikely to pose a potential health risk as they are below both human health screening levels and background levels (Sinha et al., 2012)

Potential CdTe emissions from fire are unlikely to occur at the project site because of the lack of fuel to support a sustained wildfire. Grass fires are the most likely fire exposure scenario for ground-mounted PV systems, and these fires tend to be short-lived due to the thinness of grass fuels. As a result, these fires are unlikely to expose PV modules to prolonged fire conditions or to temperatures high enough to volatilize CdTe, which has a melting point of 1,041˚C. Moreover, even if a grassland wildfire could reach that temperature, the actual CdTe emissions from a PV module would be insignificant (~0.04 percent) due to encapsulation in the molten glass matrix (Fthenakis et al., 2003).

Potential CdTe emissions from broken PV modules exposed to precipitation are also unlikely. Based on warranty return data, the breakage rate of CdTe PV modules is low, one percent over 25 years, which translates to an average of 0.04 percent per year. This breakage rate is an overestimate because over one-third of PV module breakage occurs during shipping and installation. Modules that break during shipping and installation are removed from the construction site and returned to a manufacturing facility for recycling. Even if the CdTe semiconductor layer becomes exposed to the environment, it strongly resists being released from the PV module into the environment, and CdTe has an extremely low solubility in water.

The CdTe PV modules do not pose a threat to nearby residences. The use of CdTe PV modules at the project site would not result in human or aquatic exposure of cadmium. A recent research article, Fate and Transport Evaluation of Potential Leaching Risks from Cadmium Telluride Photovoltaics (Sinha et al, 2012), further substantiates that during operation, CdTe PV modules do not pose a threat to human health or the environment due to its construction. The study evaluates the worst-case scenario to estimate potential exposures to CdTe compounds in soil, air or groundwater. The results show that exposure point concentrations in soil, air, and groundwater are one to six orders of magnitude below human health screening levels and below background levels, indicating that it is highly unlikely that exposures would pose potential health risks to onsite workers or offsite residents.

In addition, the hazardous materials that would be present in the ESS would be contained within specifications that follow applicable federal State and local requirements. OSHA requirements call for the inclusion of appropriate ventilation, acid resistant materials, and presence of spill protection supplies.

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 reduce impacts related to use of pesticides and herbicides to a less-than-significant level.

As noted above, the project would not involve the routine transport, use, or disposal of substantive quantities of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. The

closest designated route for the transport of hazardous materials is Interstate 5, which is approximately 0.9-mile west of the project (Site 4) (Federal Motor Carrier Safety Administration, 2019). Adherence to regulations and standard protocols during the storage, transportation, and usage of any hazardous materials would minimize and avoid the potential for significant impacts related to upset and accident conditions.
Overall, adherence to regulations and standard protocols during the storage, transportation, and usage of any hazardous materials, and implementation of Mitigation Measure MM 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

The decommissioning and disposal process is described under Impact 4.9-1, above. Most panel materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable laws. The PV module manufacturer provides CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Batteries within the energy storage facility would also be recycled to the extent feasible, with minimal landfill disposal.

Mitigation Measure 4.9-1 requires that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The onsite recycling coordinator shall also be responsible for ensuring that wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal. The name and phone number of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.

Mitigation Measures

MM 4.9-3: During project construction, operation, and decommissioning, the project proponent/operator shall continuously comply with the following:

- The construction contractor or project personnel shall use herbicides that are recommended by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service. Personnel applying herbicides shall have all appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use.
- Herbicides shall be mixed and applied in conformance with the manufacturer's directions.
- 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.
- 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.

- 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.
- A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.9-3: 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.

According to the Phase I Environmental Site Assessment Report (Appendix J) that was prepared for the project, none of the parcels within the project study area are included on an environmental regulatory database for hazardous materials sites pursuant to Government Code Section 65962.5. However, Project Site 4 (parcel 445-062-34) was noted to be adjacent to a large crop production facility owned by Ag Nutrient Solutions that includes bulk storage of hazardous materials. The facility was called out in the report as a recognized environmental condition because of the potential for past releases of hazardous materials to adversely affect subsurface materials on the project site. As a result, Mitigation Measure MM 4.9-4 would be required to ensure that any unknown contamination, if present, does not cause adverse effects to workers or the environment during construction.

Mitigation Measures

MM 4.9-4: The project proponent shall continuously comply with the following during construction activities that disturb subsurface materials:

1. In the event that suspect contamination is discovered during project construction, work shall immediately halt within a designated buffer area surrounding the point of discovery. A qualified hazardous materials professional shall be contacted and brought to the project site to determine the extent of the buffer area and to collect samples.
2. All suspect materials shall be isolated, covered, and protected until laboratory analysis of collected soil samples informs whether materials can be reused onsite or require offsite disposal as directed by the qualified hazardous materials professional with oversight from the Kern County Environmental Health Services Division.
3. Offsite disposal shall be done in accordance with Caltrans transportation requirements and any requirements set by the receiving disposal facility.

Level of Significance

Impacts would be less than significant.

Impact 4.9-4: The project would be located within the adopted Kern County Airport Land Use Compatibility Plan and would result in a safety hazard for people residing or working in the project area.

The project sites are not located within an airport land use plan influence area and thus would have no impact to hazards associated with airports or airstrip land use plans or otherwise result in air traffic hazards.

Mitigation Measures

No mitigation measures are required.

Level of Significance

Impacts would be less than significant.

Impact 4.9-5: The project would be located within the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.

The nearest private airport is the Skydive San Joaquin Valley Airport, which directly borders the eastern boundary of the project (Site 3), and includes a private airstrip; however, the project would not contribute to an air traffic hazard or otherwise interfere with the operation of the private airstrip. Additionally, project operational employees would travel to the site intermittently; however, visitation of the site by operational employees would not conflict with the operations of, or interfere with, use of the private airstrip that would result in a safety hazard.

Mitigation Measures

No mitigation measures are required.

Level of Significance

Impacts would be less than significant.

Impact 4.9-6 The project would impair implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan.

The proposed project site is located within a rural area that is sparsely inhabited. The project site is located near I-5, which would provide adequate access in the event of an emergency. All access on the existing road networks would be maintained throughout construction. Additionally, as part of the project, additional onsite access roadways (internal to the site) would be constructed; therefore, the development of the project would not physically interfere with emergency vehicle access or personnel evacuation from the site. Operation of the proposed project would not substantially increase road usage because there would be no residential structures constructed as a result of the proposed project, and there would be only a total of 11 full-time employees responsible for the maintenance and other activities related to ongoing operations. As further described in Section 4.15, *Transportation*, of this EIR, increased project-related traffic would not cause a significant increase in congestion and or significantly worsen the existing service levels at intersections on area roads; therefore, project-related traffic would not affect emergency access to the project site or any other surrounding location. The project would not require closures of public roads, which could inhibit access by emergency vehicles. For these reasons, construction and operation of the project

would have a less-than-significant impact on emergency access. Therefore, due to the rural location of the project, absence of any material changes to the road networks and the relatively small number of employees that would be part of ongoing project operations, the potential impacts related to emergency response and evacuation plans would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance

Impacts would be less than significant.

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.

Refer also to Section 4.18, *Wildfire*, for additional discussion. The project site is sparsely covered by vegetation and not within an area identified by the California Department of Forestry and Fire Protection as having substantial or very high fire risk, as determined by the Kern County General Plan or CAL FIRE (CAL FIRE 2007). According to the CalFire, Kern County Fire Hazards Severity Zone Maps for the Local Responsible Areas (LRA), the project sites are primarily located in an LRA Unzoned zone, but some portions of the project site are within a LRA Moderate zone (CAL FIRE, 2007). Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior. However, there is still a potential risk of wildfire.

In addition, 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 battery energy storage system 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 Kern County Fire Department 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 battery energy storage system, and would include BMPs to reduce the potential for fire and extinguishment techniques if a fire were to occur.

Therefore, the project is not anticipated to significantly increase the risk of wildfire and Mitigation Measure MM 4.14-1 would be required to ensure a fire safety plan for construction and operation of the project is implemented as part of the project.

Mitigation Measures

Implement Mitigation Measure MM 4.14-1.

Level of Significance

Impacts would be less than significant.

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 3-5, *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 as they tend to be related to onsite existing hazardous conditions and/or hazards caused by the project 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. As discussed above, the nearest school to the project is Arvin High School, located approximately 17 miles northeast of project. Given this distance, project-related infrastructure would not emit hazardous materials or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school, and impacts would be less than significant. Given that the project is not in proximity to a school, cumulative impacts are unlikely to occur. Therefore, impacts would not be cumulatively significant. The project's compliance with Mitigation Measures MM 4.9-1 through MM 4.9-4 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 schools located within 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 Measures MM 4.9-1 through MM 4.9-4 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 through MM 4.9-4, and MM 4.14-1, of Section 4.14, *Public Services*, (Fire Safety Plan), 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.

Additionally, the proposed on-site energy storage systems would be situated internally to the project site, with access from a primary fire apparatus roadway, and would be separated from each other per setback requirements identified in the California Building Code, Section 608. Ongoing project maintenance and operations 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.

In a wildfire event, it is anticipated that any employees occupying the site during project construction or operation would be rapidly evacuated in conformance with applicable County evacuation directives put in place. Such measures would ensure that the exposure of project occupants to the risk of injury or death from wildfire would be minimized to the extent feasible. Similarly, local residents would be evacuated from the surrounding communities as needed to ensure public safety.

While construction, operation, or decommissioning of the PV solar facility and gen-tie are not anticipated to significantly increase the risk of wildfire, Mitigation Measure MM 4.14-1 (see Section 4.14, *Public Services*) would be implemented to require the development and implementation of a Fire Safety Plan for construction, operation, and decommissioning of the project. Although impacts would be less than significant without mitigation, Mitigation Measure MM 4.14-1 would further reduce the potential for the project to expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Impacts would be reduced to less than significant.

As discussed above, the project site is not identified in any of the California hazardous materials databases. As such, development of the project would not create a significant hazard to the public or environment. Cumulative impacts are unlikely. Therefore, impacts would not be cumulatively significant.

The project sites are not located within an airport land use plan influence area and thus could have no cumulative contribution to hazards associated with airports or airstrip land use plans or otherwise provide any cumulatively considerable air traffic hazards.

Mitigation Measures

Implement Mitigation Measures MM 4.9-1 through MM 4.9-4, and MM 4.14-1 (see Sections 4.14-1, *Public Services* for details).

Level of Significance

Cumulative impacts would be less than significant.

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4.10 Hydrology and Water Quality

4.10.1 Introduction

This section of the Environmental Impact Report (EIR) describes the affected environment and regulatory setting relating to hydrology and water quality for the proposed Sandrini Solar Project (project). It also describes the impacts associated with hydrology and water quality that would result from implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. The information and analysis in this section are largely based on the Sandrini Solar Project Hydrology Study prepared by Quad Knopf Inc. (Appendix G of this EIR) and Water Supply Assessment Sandrini Solar Park Project prepared by ICF (Appendix M of this EIR).

4.10.2 Environmental Setting

Regional Setting

The project site is located in the San Joaquin Valley, which is drained by the San Joaquin River. This portion of the valley drains to Tulare Lake, which no longer exists due to diversions of its sources, and is known as the Tulare Lake Hydrologic Region. Tulare Lake was the largest of several similar lakes (e.g., Kern and Buena Vista Lakes) in the lower basin. Tulare Lake historically received water from the Kern, Tule, and Kaweah Rivers, as well as southern tributaries of the Kings River. Diversions for agriculture and municipal purposes has resulted in Tulare Lake drying up except for residual wetlands and occasional floods. These lakes have now been dry for many decades, and the lake bottoms are now heavily farmed.

The southern San Joaquin Valley has hot, dry summers and cool, rainy winters characterized by dense tule fog (i.e., thick low-lying fog). The rainy season runs from November through April, but only averages an annual average rainfall of just over 5 inches (Appendix M).

Climate

The climate of the region is generally hot and dry and consistent with climate characteristics of the California Desert Province. The project region is characterized by hot, dry summers, and cool winters with dense fog. The historical average annual temperature in the Kern Region is 61.4°F (Provost & Pritchard 2020), with growing-season temperatures averaging 300 days above 32°F. Temperatures exceed 90°F approximately 110 days per year (Wheeler Ridge-Maricopa Water Storage District 2020). The majority of rainfall occurs November through April; average annual total precipitation is 5.45 inches, observed from the closest weather station to the project site at the Tulefield Weather Station (WRCC 2019). Typically, the Kern region valley floor receives average precipitation of less than 6 inches per year, and the various mountain ranges can receive up to 20 inches per year (Provost & Pritchard 2020). The prevailing wind is typically from the west and the northeast, with average wind speeds approximately at 7.7 miles per hour (USDA 2021).

Site Hydrology

Surface Hydrology and Drainage

The topography of the project site is relatively flat and exhibits little variation. The project area generally slopes to the north, with elevations ranging from approximately 440 feet above mean sea level along the southern portions of the project site to 320 above mean sea level along the northern portions. The area generally drains to the north toward the Kern Lake bed via a series of human-made canals and ditches (Appendix K). The project site is located in the valley region of Kern County, and project lands are currently used for agricultural operations and/or designated for agricultural use. Most of the project site lies within the Pleitito Creek–Kern Lake Bed Hydrologic Unit Code [HUC] 1803000312 area; most of the cultivated fields in the area slope to the basin floor of the Kern Lake bed. The eastern project parcels are within the Tecuya Creek–Frontal Kern Lake Bed (HUC 1803000311) and the Caparell Creek–Frontal Kern Lake Bed (HUC 1803000310). The project site is part of the larger Middle Kern–Upper Tehachapi–Grapevine watershed.

Pleitito Creek and Tecuya Creek are approximately 4 miles and 2 miles southeast of the project site, respectively. Lake Webb and Lake Evans are approximately 9 miles and 12 miles northwest of the project site, respectively. The most prominent source of naturally occurring surface water in the region is the Kern River, which is 16 miles north of the project site. Local minor streams, many of which are ephemeral, provide additional local surface water (Appendix M).

There are also human-made surface water features located north of the project site. The New Rim Ditch canal is located at the northern boundary of the project site, and the terminus of the Arvin-Edison Canal is approximately 3 miles southeast of the project site. In addition, the California Aqueduct is located approximately 3 miles southwest of the project site. The California Aqueduct is part of the State Water Project system built and maintained by the California Department of Water Resources (DWR), which delivers water from the Sacramento–San Joaquin Delta to Southern California (Appendix M).

Floodplains

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas. According to FEMA data and maps, the majority of project acreage is located within areas of minimal flood hazard (Appendix G). However, portions (approximately 25%) of the project site are located in a 100-year flood area (Zone A). This designation means the area has 1% annual chance of shallow flooding. The project area consists of two watersheds and associated surface water sources that feed into the Kern Lake Basin. The two surface sources and flooding sources feeding into the basin are San Emigdio Creek and Tecuya Creek.

Soil Types

Soil conditions for the project site were evaluated in the Hydrology Study using soil surveys and maps prepared by the Department of Conservation, Natural Resources Conservation Services, and United States Geologic Survey. Although this research yielded more than 48 soil types throughout the greater project area, only 10 are specific to the project site (Appendix G). The site consists primarily of silty loam and sandy loam, with some loamy sand and clay interspersed. All soils are reported to have slopes from 0%–1% or 0%–2% (Appendix K). Refer to Table 4.10-1, *Project Soil Types*.

TABLE 4.10-1. PROJECT SOIL TYPES

Soil Description	Hydrologic Group	Approximate Percent of Project
Calflax Loam	C	58.28%
Fages Clay	D	12.81%
Excelsior Sandy Loam	A	12.46%
Cerini Loam	B	6.63%
Excelsior Fine Sandy Loam	B	3.87%
Milargo Loamy Sand	B	1.91%
Posochanet Silt Loam	C	0.98%
Millox Clay Loam	C	0.18%
Cerini Sandy Loam	A	0.14%
Granoso Loamy Sand	A	0.01%
Water	N/A	2.73%

SOURCE: Appendix G

Soil Descriptions

Calflax Loam: The Calflax series consists of very deep, well-drained soils that formed in alluvium derived from rocks of mixed mineralogy. These soils are on fan skirts. Slopes are 0% to 1% with elevations ranging from 285 to 485 feet (Appendix G).

Fages Clay: The Fages series consists of very deep, moderately well-drained soils formed in alluvium derived from mixed rock sources. Fages soils are typically on relic basin floors. Slopes are 0% to 1% with elevations ranging from 285 to 340 feet (Appendix G).

Excelsior Fine Sandy Loam and Excelsior Sandy Loam: The Excelsior series consists of very deep, moderately drained soils that formed in alluvium derived from sedimentary rock. These soils are on alluvial fans and fan skirts. Slopes are 0% to 2% with elevations ranging from 325 to 950 feet (Appendix G).

Cerini Loam and Cerini Sandy Loam: The Cerini series consists of very deep, well-drained soils on alluvial fans. These soils formed in alluvium derived dominantly from sedimentary rock. Slopes are 0% to 2% with elevations ranging from 515 to 960 feet (Appendix G).

Milagro Loamy Sand: Similar to the Vineland series, this series consists consist of soils on floodplains and deltas. Slopes are 0% to 1% with elevations ranging from 285 to 680 feet (Appendix G).

Posochanet Silt Loam: Posochanet soils, on alluvial fans, have an organic matter content that decreases regularly with increasing depth. These soils formed in stratified alluvium derived dominantly from calcareous sedimentary rocks with influence from granitic rock sources in some areas. Slopes are 0% to 2% with elevations ranging from 290 to 415 feet (Appendix G).

Millox Clay Loam: The Millox series consists of very deep, moderately well-drained soils formed in alluvium derived from mixed rock sources. Slopes are 0% to 1% with elevations ranging from 285 to 310 feet (Appendix G).

Granoso Loamy Sand: The Granoso series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from rocks of mixed mineralogy. These soils are on alluvial fans and floodplains. Slopes are 0% to 5% with elevations ranging from 305 to 520 feet (Appendix G).

Hydrologic Soil Groups

Soil groups detailed in Table 4.10-1, *Project Soil Types*, were classified based on the minimum infiltration rate and are rated A, B, C, or D. The soil properties correlate to saturation levels during a flood event. A floodplain model was compiled with each of these soil classifications and assigned an infiltration value (Appendix G).

Soils Group A are characterized by soils having high infiltration rates even when thoroughly wetted, consisting chiefly of deep, well to excessively drained sands or gravel. The soils have high water transmission and low runoff potential. These soils, which are prevalent in the streambeds and on-site areas, are excellent for stormwater retention basin use (Appendix G).

Soils Group B are characterized by having slow infiltration rates when thoroughly wetted, consisting 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 and are generally suitable for stormwater retention basins on a case-by-case basis (Appendix G).

Soils Group C are characterized by having slow infiltration rates even when thoroughly wetted and consisting 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 (Appendix G).

Soils Group D are characterized by having very slow infiltration rates when thoroughly wetted, consisting chiefly of clay soils with high swelling potential, soils with a high permanent water table, soils with clay pan or clay layer at or near the surface, and shallow soils over nearly impervious materials. These soils have very slow water transmission and high storm runoff potential. Stormwater retention basins are not recommended for Group D soils (Appendix G).

The project site is mostly composed of Soil Groups C, with some areas in Soil Group A, B, and D (Appendix G).

Groundwater Resources

Kern County Groundwater Subbasin

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 (Appendix M).

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. Tulare and Kern River Formations are Plio-Pleistocene age and represent a west/east composition change across the subbasin. In the western portion of the subbasin, the Tulare Formation originated predominantly from Coast Range sources and contains up to 2,200 feet of interbedded, oxidized to reduced sands. Younger

Alluvium/Flood Basin deposits varies in character and thickness throughout the subbasin. At the eastern and southern subbasin margins, the unit is composed of up to 150 feet of interstratified and discontinuous beds of clay, silt, sand, and gravel. Deposits in the southwestern subbasin are finer-grained and less-permeable and grade into flood basin deposits underlying the historic beds of Buena Vista and Kern Lakes in the southern subbasin. The flood basin deposits consist of silt, silty clay, sandy clay, and clay interbedded with poorly permeable sand layers. The highest specific yield values are associated with sediments of the Kern River Fan west of Bakersfield (Appendix M).

The subbasin is naturally recharged primarily through stream seepage along the eastern subbasin and Kern River (DWR 2006). 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 (Appendix M).

DWR has identified the Kern County Subbasin as a "critically overdraft basin." In some areas of critical overdraft, complete disconnection between groundwater and overlying surface water systems has occurred (Groundwater Exchange 2020). Current baseline conditions estimate that the subbasin has an average annual overdraft of 324,326 acre-feet per year (AFY), with the Kern Groundwater Authority representing approximately 256,281 AFY of the deficit. However, with projects and management actions proposed for development and implementation in the subbasin, it is projected that the subbasin will achieve sustainability by 2040, with an estimated 42,144 AFY of surplus (Kern Groundwater Authority 2020).

Many ongoing projects aim to increase surface water supply and groundwater banking in the region. Conjunctive use programs in the subbasin have been developed to capture and transport wet-year surface water for the purpose of groundwater recharge and to offset use of groundwater pumping, preparing the basin for dry periods when surface water may be limited. Projects such as interties, pipelines, and recharge basins have been developed, financed, and implemented by districts within the Kern County Subbasin to deliver, bank, and return surface water, as well as replenish aquifers to better prepare for and manage water supplies during dry periods when beneficial uses are more reliant on groundwater (Kern Groundwater Authority 2020).

The geologic and soils report gathered mapping data from DWR that indicates that in spring 2018, depth to groundwater in the project area ranged from approximately 120 feet below the ground surface to 320 feet below the ground surface. The geologic and soils report also gathered groundwater elevation data from DWR obtained from wells in the vicinity of the project site. This data indicated that, in some areas, groundwater may have been as shallow as 6 feet below the ground surface (Appendix K).

4.10.3 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code 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 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 Boards (RWQCBs).

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 crossings during road, pipeline, or transmission line construction, that may result in discharges into waters of the United States 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 "Construction General Permit." Construction activities can comply with and be covered under the Construction General Permit provided that they do the following:

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that 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 United States.
- Perform inspections of all BMPs.

NPDES regulations are administered by the Central Valley RWQCB. Projects that disturb 1 or more acres, including the proposed project, are required to obtain NPDES coverage under the Construction General Permit.

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 United States, including wetlands. For purposes of Section 404 of the CWA, the limits of non-tidal waters extend to the ordinary high water mark, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as a 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 done the following:

- Taken steps to avoid impacts to wetlands or waters of the United States, where practicable
- Minimized unavoidable impacts to waters of the United States and wetlands
- 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 United States 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 Central Valley 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 that 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 load requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop total maximum daily load requirements.

National Flood Insurance Act

FEMA is responsible for managing the National Flood Insurance Program, which makes federally backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The National Flood Insurance Program, 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 Flood Insurance Rate Maps that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements. The County of Kern is a participating jurisdiction in the National Flood Insurance Program and, therefore, all new development must comply with the minimum requirements of the National Flood Insurance Program.

State

Department of Water Resources

The major responsibilities of 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 groundwater 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 an RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface water and groundwater supplies, and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing CWA Sections 401 through 402 and 303(d) to the SWRCB and 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. Basin plans must be updated every 3 years. Compliance with basin plans is primarily achieved through implementation of the NPDES permit, which regulates waste discharges.

The Porter-Cologne Act requires that any person discharging waste or proposing to discharge waste within any region anywhere other than to a community sewer system that could affect the quality of "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, RWQCBs encourage implementation of BMPs similar to those required for NPDES stormwater permits to protect the water quality objectives and beneficial uses of local surface waters The Water Quality Control Plan for the Tulare Lake Basin (Basin Plan), as implemented by the Central Valley RWQCB, is the Basin Plan applicable to the proposed project (CVRWQCB 2018).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires the formation of local-controlled Groundwater Sustainable Agencies (GSAs) in high- and medium-priority groundwater basins. These GSAs are responsible for developing and implementing a Groundwater Sustainability Plan (GSP) to ensure that basins operate within their sustainable yield without causing undesirable results.

DWR has designated the Kern County Subbasin as a high-priority basin; therefore, SGMA requires a GSP to manage sustainability of the groundwater basin. The subbasin includes 11 GSAs. Of these, six GSAs have elected to be included in the Kern Groundwater Authority GSP. The Kern Groundwater Authority, through a Joint Powers Agreement, is a recognized GSA in the subbasin for the purpose of developing a GSP (Appendix M). The Kern Groundwater Authority GSP was submitted to DWR in January 2020 (Kern Groundwater Authority 2020).

Four other established GSAs in the Kern County Groundwater Subbasin submitted GSPs: The Kern River Groundwater Sustainability Agency, Buena Vista Water Storage District, Henry Miller Water District, and Olcese GSA. The Kern Groundwater Authority has considered and coordinated with the other four GSAs in the subbasin to comply with the requirement of developing and using consistent data and methodologies throughout the subbasin. Further, the GSAs within the subbasin coordinated the respective elements of their GSPs necessary for achieving the sustainability goals for the subbasin.

The Kern Groundwater Authority GSP also includes multiple types of member agency actions to reduce groundwater pumping. These actions include financial incentives to reduce groundwater pumping, such as fees for pumping or establishment of a groundwater market and trading program. Other actions to reduce pumping include an allocation system that is based on acreage or baseline pumping rates (Kern Groundwater Authority 2020).

Streambed Alteration Agreement (California Fish and Game Code)

Section 1602 of the California Fish and Game Code 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 CDFW before beginning any activity that will do any of the following:

- Substantially divert or obstruct the natural flow of any river, stream or lake
- Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake

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 CDFW determines that 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. CDFW must comply with the California Environmental Quality Act (CEQA) before it may issue a final Lake or Streambed Alteration Agreement; therefore, 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.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within general and specific plans and codes, including the Kern County General Plan, Mojave Specific Plan, West Edwards Road Settlement Specific 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. The policies and implementation measures in the Kern County General Plan, Mojave Specific Plan, and West Edwards Road Settlement Specific Plan related to hydrology and water quality that are applicable to the project are provided below. The Kern County General Plan (County of Kern 2009) 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*, of this EIR, all policies, goals, and implementation measures in the Kern County General Plan and Willow Springs Specific Plan (County of Kern 2008) 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:

1. Requiring water-conserving design and equipment in new construction;
2. Encouraging water-conserving landscaping and irrigation methods; and
3. Encouraging the retrofitting of existing development with water conserving devices

Kern County Code of Building Regulations

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 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 of Kern.

Water Quality Control Plan for the Tulare Lake Basin

Each of the nine RWQCBs adopts a Water Quality Control Plan that 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 project site is located within the Central Valley RWQCB planning area and is subject to the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) (CVRWQCB 2018).

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing 1 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 stormwater is retained on site and no stormwater runoff, sediment, or pollutants from on-site construction activity can discharge directly or indirectly off site or to a river, lake, stream, municipal storm drain, or off-site drainage facilities.
2. All stormwater 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 must be developed and BMPs must be implemented.
3. All stormwater runoff is not retained on site, and the discharge is to a water of the United States. Therefore, a Notice of Intent must be filed with the RWQCB prior to issuance of the building permit. Also, a SWPPP must be 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 – NPDES Applicability Form

As closed systems that never contact the ocean or other waters of the United States, 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 stormwater 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 the project (if any). Should stormwater runoff be contained on site and not discharged into any waters, no special actions are required. Should stormwater runoff discharge into waters of the United States, compliance with the SWRCB Construction General Permit SWPPP requirements is required. Should stormwater 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 Integrated Regional Water Management Plan

The project site is located in the plan area for the Tulare Lake Basin Portion of the Kern County Integrated Regional Water Management Plan (IRWMP). The purpose of the Kern County IRWMP is to develop a cooperative regional framework, implementation plan, and context for managing water resources in the Kern County region. A collaborative approach for the Kern County IRWMP was developed and implemented to help strengthen regional influence, reduce conflict, increase benefits across the region regarding water supply and water quality issues, and reduce costs for individual water agencies. One primary goal of the IRWMP is to establish a linkage to IRWMPs prepared by other regions, if appropriate. For example, it may be that issues of importance to the entire Tulare Lake hydrologic region, or to the San Joaquin Valley as a whole, could be addressed by linking multiple IRWMPs to solve common water supply and/or water quality issues. Linkage of these IRWMPs will provide mutual benefits and potential joint funding partnership opportunities for entities within the Tulare Lake hydrologic region.

4.10.4 Impacts and Mitigation Measures

Methodology

This section analyzes impacts on hydrology and water quality from implementation of the proposed project based on changes to the environmental setting as described above, identified drainage conditions on the project site, and the current regulatory framework. The proposed project's potential hydrology and water quality impacts have been evaluated using the Sandrini Solar Project Hydrology Study prepared by Quad Knopf Inc. (Appendix G) and Water Supply Assessment Sandrini Solar Park Project prepared by ICF (Appendix M). Potential significant impacts associated with the project were evaluated based on a review of available data and information, which is summarized above, and consideration of changes that would occur as a result of project implementation, in comparison to existing conditions.

Thresholds of Significance

Kern County identifies 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 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 that would:
    1. Result in substantial erosion or siltation on- or offsite;
    2. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    3. 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;
    4. Impede or redirect flood flows;
d. In 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 degrade surface or groundwater water quality.

Construction

Project construction would include clearing, grubbing, excavating, and grading portions of the project site. Conventional grading would be performed selectively throughout the project site, but because the project site is relatively flat, it is anticipated that grading would be limited in most areas. Scrapers, excavators, dozers, water trucks, paddlewheels, haul vehicles, and graders may all be used in site preparation. Access roads may be compacted, as required, to support construction and emergency vehicles. Certain access roads may also be surfaced with aggregate or decomposed granite in conformance with emergency access requirements. Grading is expected to be balanced on site, with no need for the export or import of soils. These activities could affect current drainage patterns and erosion on the project site; however, the project grading plan, including grading activities associated with access roads, would be in compliance with County of Kern (County) standards to prevent substantial alterations to drainage patterns and erosion within the project site.

Potential impacts on water quality from erosion and sedimentation are expected to be localized and temporary during construction. Stormwater runoff from the project site would not discharge to waters of the United States because the project site is within a watershed that is not hydrologically connected to a navigable waterway. However, according to the Kern County Public Works Department NPDES applicability form, the project would be required to implement a SWPPP during construction because it would involve construction activities disturbing more than 1 or more acres. Per Mitigation Measure (MM) 4.7-4 in Section 4.7, *Geology and Soils*, of this EIR, the SWPPP would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality. The SWPPP would be applicable to all areas of the project, including solar development and the generation tie-line (gen-tie line) alignment. In addition, prior to the commencement of construction activities, the project applicant would be required to adhere to the requirements of the Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage on site, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.

The project would also comply with the Kern County Grading Ordinance, which requires implementation of dust control during all grading operations and the use of temporary drainage and erosion control measures on site, as needed. Furthermore, MM 4.10-1, detailed below, would require the preparation of a design-specific grading and drainage plan per the Kern County Development Standards and the Kern County Code of Building Regulations prior to issuance of a grading permit. The project would be designed to comply with all setback requirements and would ensure that facilities are located in such a way to lessen their impact on drainage areas and associated water quality. This would decrease the potential of stormwater mixing with construction-related materials, and thus, avoid substantial degradation of water quality.

Additionally, during project construction, any activity that results in the accidental release of hazardous or potentially hazardous materials could result in water quality degradation. Materials that could contribute to this potential impact include diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids used 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.

As noted in Section 4.9, *Hazards and Hazardous Materials*, of this EIR, MM 4.9-2 would require the project applicant to prepare a Hazardous Materials Business Plan for County review and approval 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.

Therefore, with implementation of MM 4.7-4, MM 4.9-2, and MM 4.10-1; implementation of required plans described previously, including a grading plan and drainage plan; and compliance with the Kern County Development Standards, Kern County Grading Ordinance, and Kern County Code of Building Regulations, impacts would be less than significant during construction.

Operation

The proposed project would require limited use of certain hazardous materials for routine operations and maintenance. Accidental release of such materials, including fuels, paints, coatings, lubricants, and transformer oil, would result in water quality degradation should the materials become entrained in stormwater. This would result in a potentially significant impact on water quality. However, as described above, implementation of MM 4.9-2 would require implementation of a Hazardous Materials Business Plan, which would ensure safe handling of hazardous materials on site and provide the means for prompt cleanup in the event of an accidental hazardous material release.

Water quality could also be degraded by non-hazardous materials during operation activities. For example, during dry periods, impervious surfaces (i.e., hardscape surfaces such as foundations and buildings) can collect greases, oils, and other vehicle-related pollutants. During storm events, these pollutants can mix with stormwater and degrade water quality. Apart from infrequent cleaning of solar panels with water that would result in minimal runoff, no other discharges would occur when the project is operational. However, per MM 4.10-1, a drainage plan would be prepared in accordance with the Kern County Development Standards and Kern County Code of Building Regulations, which would include post-construction structural and nonstructural BMPs to prevent degradation of water quality. BMPs could include features

such as drainage swales for collection of runoff prior to off-site discharge. Adherence to these requirements would minimize potential for operational water quality degradation.

With implementation of MM 4.7-4, MM 4.9-2, and MM 4.10-1, the project would not violate water quality standards or waste discharge requirements, or otherwise degrade water quality in surface water or groundwater.

Mitigation Measures

MM 4.10-1: Prior to the issuance of a grading permit, the project proponent/operator shall complete a final hydrologic study, grading plan, and drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study and plans shall include 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. An assessment of the 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 and applied within the site boundary. Engineering recommendations shall 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 to minimize erosion, sedimentation, and flooding on site and off site.

d. A specification that the final design of the solar arrays shall include 1 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 1 foot or as required by Kern County's Floodplain Ordinance.

e. The grading and drainage plans 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

Impacts would be less than significant.

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.

Construction

The primary proposed source of water for project construction would be groundwater from a privately owned well (Maricopa Orchards, Well 1/Old River Well) located adjacent to the project site in the Wheeler Ridge–Maricopa Water Storage District (WRMWSD). Well 2/Copus Well, which is also located within the WRMWSD, has been identified as a second potential groundwater source. A water rights/pumping purchase agreement with a private groundwater well landowner would be executed prior to construction. During construction, water would be used for dust suppression on and along project roads, as required by site

conditions. The amount of water used would vary based on site conditions and local rainfall, but in general, construction activities would require approximately 65 acre-feet of water over an approximately 18-month period. This is an equivalent of 55.7 AFY of water. In addition to dust control and other construction-related water use, potable water for drinking and hand washing would be brought to the site by a bottled water service provider during construction and decommissioning. As such, potable water required during construction and decommissioning would not impact local groundwater supplies.

Groundwater elevations in the project area are approximately 100 to 250 feet above mean sea level and 200 to 250 feet above mean sea level in the spring and fall, respectively (Kern Groundwater Authority 2020). Pumping water levels in Well 1 and Well 2 are 506 feet and 622 feet, respectively. If the project's construction water supply is sourced from the WRMWSD (whose long-term water contracts is provided through the Kern County Water Agency), the water delivered may be sourced, in part, from groundwater wells that supplement imported water. The WRMWSD is a participant of the Kern Water Bank Authority. The Kern Water Bank Authority is a Joint Powers Authority formed for the purpose of recharging, storing, and recovering water to improve the water supply during periods of water shortages. The Kern Water Bank Authority owns 20,000 acres known as the Kern Water Bank within Kern County, which has the capability of storing more than 1,500,000 acre-feet on a long-term basis, and has the capability of extracting approximately 240,000 AFY (Provost & Pritchard Consulting Group 2020).

As stated above, construction of the project is anticipated use approximately 55.7 AFY, requiring a pumping rate of approximately 69 gallons per minute, which would constitute a temporary, one-time use of groundwater resources. According to the Water Supply Assessment prepared for the project (Appendix M), this pumping rate represents less than 10% of the measured flow rate identified for the private well proposed as the source for construction water supply. Therefore, the relatively small volume of water required for project construction could be met by existing wells. The amount of water needed for construction is anticipated to fall within the existing pumping allocation of the well based on the measured flow rates of existing wells and amount of groundwater stored in the Kern Water Bank. Therefore, the existing groundwater wells proposed to supply water to the project would draw water supply from an existing privately owned water-right, and as such, groundwater demand for the project has been incorporated into Kern County Subbasin groundwater supply projections.

Additionally, due to the minimal amount of groundwater needed for construction activities, and the temporary, short-term nature of groundwater extraction required, construction of the project would not be considered water intensive. Moreover, the Kern Groundwater Authority GSP specifically states that one management action of the Arvin–Edison Water Storage District (a neighboring water district to the WRMWSD) is to "provide subsidies to incentivize groundwater users to convert land to alternative land uses (e.g., solar farms) and reduce groundwater extractions" (Kern Groundwater Authority 2020), demonstrating that solar facilities are considered a preferred use in the context of groundwater sustainability due to the minimal demand for groundwater resources they require compared to other land use types, such as agricultural uses, which are considered substantially more water-intensive by comparison. As such, construction of the project would be consistent with the Kern Groundwater Authority GSP, and project implementation would not impede sustainable groundwater management of the basin. Therefore, impacts would be less than significant.

Operation

The proposed project, including solar photovoltaic (PV) panels, would require minimal water use during operation. Panel surfaces would be washed once per year, on average. The annual water consumption for

project operations, including periodic PV module washing, is expected to be approximately 1 AFY. Operational water supply would be sourced from the same groundwater wells identified for construction. Assuming a 12-hour operational day, the estimated water demand (1 acre-foot) would require a pumping rate of approximately 1.2 gallons per minute. This volume of water needed for project operations can be accommodated by the existing groundwater wells, and is considered a relatively small volume needed compared to that of typical agricultural operations. By way of comparison, if the project site were planted with alfalfa (an active crop being cultivated adjacent to the project site), this would require approximately 24,511 AFY (Appendix M).

Additionally, the project would result in an increase in impervious surfaces on the site as a result of equipment foundations, PV solar panels, the operations and maintenance buildings, and the energy storage facilities. The access roads could also increase impervious surface areas if paved or compacted gravel base is used. Although the panels and panel foundations are impervious, stormwater falling on the panels would drip off and infiltrate into the surrounding pervious ground surfaces. Although some impervious surfaces would be introduced to the project site, the majority of the site would remain pervious and thus not substantively interfere with groundwater recharge. Therefore, because the project would leave large areas of pervious surfaces intact that would continue to accommodate stormwater runoff, implementation of the project would not result in a significant reduction in groundwater infiltration rates. The project would have a less-than-significant impact on groundwater supplies related to groundwater recharge at the site during project operations.

As described above, MM 4.10-1 would require the preparation of a design-level grading and drainage plan per the Kern County Development Standards and the Kern County Code of Building Regulations prior to issuance of a grading permit. The hydrologic study and drainage plan would evaluate the changes to hydrology on site, and recommend measures to minimize potential increases in runoff from the project site. Recommended measures may include the development of on-site features, such as retention basins, to manage flow concentrations and allow groundwater infiltration.

Adherence to the requirements of the approved final hydrologic study and drainage plan would minimize operational impacts to groundwater recharge during operation. With implementation of MM 4.10-1, project operations would have a less-than-significant impact on groundwater supplies or recharge.

Moreover, as discussed under “Construction,” above, due to the minimal volume of water required for project operations, the project would be consistent with the Kern Groundwater Authority GSP, and project implementation would not impede sustainable groundwater management of the basin. Therefore, impacts would be less than significant.

Mitigation Measures

MM 4.10-1 would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

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.

The project would involve limited grading such that off-site flow that enters the project site would continue to flow south through the project site much as it does currently. The topography of the project area is relatively flat and exhibits little variation. The project area generally slopes gradually to the north with elevations ranging from approximately 440 feet above mean sea level along the southern portions of the project site to 320 above mean sea level along the northern portions, and drains to the north toward Kern Lake Bed via a series of human-made canals and ditches (Appendix K). It is expected that site conditions and soils would continue to convey storm flows following project implementation, and the project is not expected to significantly affect the flow patterns of any existing drainage courses or swales in the project vicinity. It is anticipated that water from storm and rain events would fall from PV panels and pond at the drip point before infiltrating or gradually migrating into existing drainage patterns (Appendix M).

Although implementation of the project is not anticipated to substantially alter existing drainage patterns of the site or surrounding area, construction of the project has the potential to alter existing on-site drainage patterns and flowpaths to some degree. Impervious surfaces introduced to the site following project development could generate additional stormwater runoff on site, which could exacerbate potential erosion and sedimentation on site or downstream. This activity could concentrate flows from storms and construction water usage, thus resulting in increased erosion of existing soils on site and sedimentation of water. Ground disturbance in drainage areas has a higher likelihood of resulting in erosion and sedimentation because water flow is more concentrated in these areas and has greater erosive potential.

As described for Impact 4.10-1, above, the proposed project would be required implement a SWPPP per MM 4.7-4 that would maintain existing vegetation and topography to the maximum extent feasible, as well as include erosion and sediment control BMPs designed to prevent erosion and sedimentation from occurring during project construction. Additionally, the project would be in compliance with the Kern County Grading Ordinance, which requires implementation of erosion prevention measures during construction. With regard to erosion and sedimentation during project operation caused by increased runoff from impervious surfaces, large amounts of pervious ground surface would remain following project implementation that would continue to absorb the majority of surface flows.

Further, MM 4.10-1 requires the completion of a design-level grading and drainage plan for County review and approval prior to the issuance of a grading permit. The plans would demonstrate that the project has been designed to minimize potential increases in runoff. Runoff minimization measures could include features such as an on-site retention basin to capture high storm flows. Any stormwater management features would be consistent with existing regulatory requirements and would minimize any erosion or sedimentation to less-than-significant levels. With implementation of MM 4.7-4 and MM 4-10-1, impacts would be less than significant.

Mitigation Measures

Implement MM 4.7-4 and MM 4.10-1; see Section 4.7, *Geology and Soils,* for details regarding MM 4.7-4).

Level of Significance after Mitigation

Impacts would be 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.

As discussed above for Impact 4.10-3, implementation of the project would alter existing on-site drainage patterns and flowpaths to a certain degree compared to existing conditions, and would include the introduction of new impervious surfaces to the project site. These changes have the potential to cause or exacerbate localized flooding during major events within or along the margins of the project site, depending on how stormwater is managed under final project design per MM 4.10-1. Changes in drainage patterns on site that relate to the installation of new facilities, particularly changes that result in flow concentration, could increase the occurrence of localized flooding on site or downstream. The proposed new impervious surfaces could generate additional stormwater runoff on site and exacerbate potential increases in localized flooding on site or downstream.

According to FEMA, the majority of the project site is located within an area of minimal flood hazard (Appendix G). However, approximately 25% of the area proposed for development is located in a 100-year flood area (Zone A). As noted in the Hydrology Study prepared for the project (Appendix G), soils within the project boundaries are classified as hydrological soils that are capable of sustaining percolation rates for flood mitigation. Hydraulic calculations performed in accordance with the Kern County Hydrology Manual indicate potential flood depths on site would be moderate, ranging from 0 to 1.75 feet above ground surface (Appendix G).

As described in MM 4.10-1, a final design-level drainage plan would be completed for the project, which would include runoff calculations and design features developed in accordance with Kern County Development Standards, the Kern County Grading Ordinance, the Kern County Floodplain Ordinance, and the Kern County Code of Building Regulations. The final drainage plain would ensure appropriate drainage for the project site and that any proposed development within the flood area (Zone A) would be designed to limit obstructions and impacts related to the floodplain. Specifically, the final drainage plan would ensure that design of the solar arrays include 1 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 would also be graded to direct potential flood waters without increasing water surface elevations more than 1 foot or as required by Kern County's Floodplain Ordinance. With implementation of MM 4.10-1, final design of proposed stormwater management facilities and post-construction BMPs would be reviewed and approved by the County. Final drainage plans and design would verify that the project would not result in a significant impact to the floodplain due to construction or operation of the project. Therefore, with the implementation of MM 4.10-1, impacts would be less than significant.

Mitigation Measures

MM 4.10-1 would be required.

Level of Significance after Mitigation

Impacts would be 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.

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 would be required to adhere to Kern County Public Works Department stormwater requirements, which include measures to address stormwater controls for management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. During operation, most of the project site would remain as pervious surface, and allowing infiltration of the runoff produced by the new minor impervious surfaces and runoff pollutants would be minimized per measures detailed above for Impact 4.10-1. The project would not exceed the capacity of any existing or planned infrastructure, and implementation of MM 4.7-4 and MM 4.10-1 would minimize potential increases in stormwater flow and other project-induced changes to drainage patterns to a less-than-significant impact.

Mitigation Measures

Implement MM 4.7-4 and MM 4.10-1 (see Section 4.7, *Geology and Soils,* for details regarding MM 4.7-4).

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

As noted in Section 4.10.2, *Environmental Setting*, the Hydrology Study and review of FEMA maps and data indicate that the majority of the project site is located in an area of minimal flood hazard, and approximately 25% of the project site is located within a 100-year flood area (Zone A) (Appendix G). Therefore, the project would introduce structures on the project site, such as panel foundations, the operations and maintenance building, the energy storage system, and other development components, that could potentially impede or redirect flood flows, particularly within the 100-year flood area (Zone A). However, most project components would consist of solar panels that are mounted on steel support posts and spread out across the project site, thus minimizing the amount of impervious surface area that would be introduced throughout the project site. In addition, implementation of MM 4.10-1 would require preparation of a design-level drainage plan that would design project facilities to have 1 foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Additionally, per MM 4.10-1, grading for the project would be designed so that water surface elevations during flood events would not be increased by more than 1 foot. Therefore, with implementation of MM 4.10-1, the project would not substantially alter the existing drainage patterns of the site in a manner that would impede or redirect flood flows, and impacts would be less than significant.

Mitigation Measures

Implement MM 4.10-1.

Level of Significance after Mitigation

Impacts would be 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.

As described above, portions of the project site are located in a 100-year flood zone (Zone A). Implementation of the drainage plan required by MM 4.10-1 would ensure that proper drainage and design considerations are implemented, including a requirement that storage of hazardous materials have at least 1 foot of freeboard above the calculated flood depth. As discussed more thoroughly in Section 4.9, *Hazards and Hazardous Materials*, the project would not include the use, storage, or disposal of significant quantities of hazardous materials. In addition, MM 4.9-2 would require implementation of a Hazardous Materials Business Plan that would ensure safe handling of hazardous materials on site and would provide the means for prompt cleanup in the event of an accidental hazardous material release.

Additionally, the project site is located well inland and far from the ocean and any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards. Therefore, considering the limited amount of storage of hazardous materials at the site, implementation of a project-specific drainage plan that would provide flood protection measures, and the negligible changes in flood water surface elevations from the project, the potential for release of pollutants due to project inundation would be less than significant.

Mitigation Measures

Implement MM 4.9-1, MM 4.9-2, and MM 4.10-1 (see Section 4.9, *Hazards and Hazardous Materials*, for details regarding MM 4.9-1 and MM 4.9-2).

Level of Significance after Mitigation

Impacts would be 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.

The project site is located within 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 1 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 waters 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 within the Kern County Subbasin, which is a high-priority basin under the SGMA. The Kern Groundwater Authority, through a Joint Powers Agreement, is a recognized Groundwater Sustainability Agency in the Kern County Subbasin for the purpose of developing a GSP (Appendix M). The Kern Groundwater Authority GSP was submitted to DWR in January 2020 (Kern Groundwater Authority 2020). As described in Section 4.10.3, *Regulatory Setting*,

within the Kern County Groundwater Subbasin there are four other established GSAs that have submitted GSPs: the Kern River Groundwater Sustainability Agency, Buena Vista Water Storage District, Henry Miller Water District, and Olcese GSA. These GSPs include multiple types of member-agency actions to reduce groundwater pumping. These actions include financial incentives to reduce groundwater pumping, such as fees for pumping or establishment of a groundwater market and trading programs. Other actions to reduce pumping include programs to limit pumping based on an allocation system that could be based on acreage or baseline pumping rates (Appendix M).

As discussed for Impact 4.10-2, project water supply is primarily anticipated to be obtained from existing off-site groundwater wells. Project construction is anticipated use groundwater at an approximate rate of 55.7 AFY over an approximately 18-month period, which would constitute a temporary, one-time use of groundwater resources. According to the Water Supply Assessment prepared for the project (Appendix M), this pumping rate represents less than 10% of the measured flow rate identified for the private well proposed as the source for construction water supply. Therefore, the relatively small volume of water required for project construction could be met by existing wells. The amount of water needed for construction is anticipated to fall within the existing pumping allocation of the well based on the measured flow rates of existing wells and the amount of groundwater stored in the Kern Water Bank. After the construction phase, annual water consumption for operations of the project, including periodic PV module washing, is expected to be approximately 1 acre-foot per year. It has been estimated that these wells have sufficient supply and pumping rates to serve the project (Appendix M); therefore, construction of new wells would not be needed.

Moreover, the Kern Groundwater Authority GSP specifically states that one management action of the Arvin-Edison Water Storage District (a neighboring water district to the WRMWSD) is to "provide subsidies to incentivize groundwater users to convert land to alternative land uses (e.g., solar farms) and reduce groundwater extractions" (Kern Groundwater Authority 2020), demonstrating that solar facilities are considered a preferred use in the context of groundwater sustainability due to the minimal demand for groundwater resources they require compared to other land use types, such as agricultural uses, which are considered substantially more water-intensive by comparison.

Therefore, because the existing groundwater wells proposed for the project are located in the Kern County Subbasin and would draw water supply from an existing privately owned water-right, groundwater demand for the project has been incorporated into Kern County Subbasin groundwater supply projections. As such, construction and operation of the project would be consistent with the Kern Groundwater Authority GSP, and project implementation would not impede sustainable groundwater management of the basin. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, of this EIR, multiple projects are proposed throughout Kern County and the Southern San Joaquin Valley, including solar facilities, agricultural trucking facilities, telecommunication infrastructure, and commercial development.

Similar to the proposed project, all cumulative projects would not discharge to waters of the United States due to their location within the San Joaquin Valley, which is effectively a closed basin with no outlet to the Pacific Ocean. All projects that would not retain all runoff on site would be required to prepare a SWPPP, just as with the proposed project under MM 4.7-4, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Furthermore, the proposed project would implement a Hazardous Materials Business Plan as part of MM 4.9-2 that would require appropriate handling of hazardous materials on site to ensure they do not enter stormwater and affect water quality. All other projects in the vicinity that would handle hazardous materials would also be required to comply with hazardous material regulations. Therefore, 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 project would require temporary, short-term water supply during construction, with primary water needs occurring during earth-moving activities for dust control. This short-term water supply is anticipated to be provided by private groundwater wells; however, this water supply could also come from surface water provided by the Kern County Water Agency, or a combination of both sources. Based on the Water Supply Assessment prepared for the project (Appendix M), long-term water demand for the proposed project would be relatively minor and could be met by available Kern County Water Agency surface water sources under normal conditions, and groundwater pumping under all water year types, or both. The proposed project water demand would not impact Kern County Water Agency water supplies or deplete long-term groundwater supplies. It is expected that implementation of SGMA requirements would create reliable groundwater supply that would not depend on water year type, because implementation of SGMA requirements would restrict groundwater pumping throughout the subbasin. The privately owned groundwater wells proposed as water supply are located in the Kern County Subbasin and would draw water supply from an existing privately owned water-right; therefore, groundwater demand for the project has already been incorporated into Kern County Water Agency's and the Kern County Subbasin's groundwater supply projections, and thus are permitted to provide project water. Moreover, implementation of the GSP would require annual reporting and periodic updates to ensure that sustainable management is achieved at the end of the 20-year period; therefore, the GSP, by definition, is developed to achieve sustainable groundwater management and preclude significant cumulative impacts to groundwater supply in the subbasin. In fact, with projects and management actions proposed for development and implementation in the subbasin, it is projected that the subbasin will achieve sustainability by 2040 (Appendix M). Furthermore, long-term water demand for the project would be minimal (approximately 1 acre-foot per year), with water requirements much lower than that associated with the historical agricultural activities at the site. As such, the project would not contribute to a cumulatively considerable impact on groundwater or surface water supplies.

With respect to erosion, drainage, and flooding, the project would implement MM 4.10-1, which would minimize direct impacts related to erosion, drainage, and flooding. It is anticipated that other cumulative projects would be required to implement similar measures to minimize erosion, drainage, and flooding impacts. Additionally, drainage-related impacts from cumulative projects would be primarily localized.

Therefore, cumulative impacts related to erosion, drainage, and flooding are not anticipated to be cumulatively considerable, and the project would not contribute to a cumulative impact related to flooding, erosion, or drainage.

Mitigation Measures

Implement Mitigation Measures MM 4.7-4, MM 4.9-2, and MM 4.10-1 (see Section 4.7, *Geology and Soils*, for details regarding MM 4.7-4, and Section 4.9, *Hazards and Hazardous Materials*, for details regarding MM 4.9-2).

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

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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

On-Site Land Uses

The proposed project is located approximately 3 miles from the nearest established community, which is the unincorporated rural community of Mettler. The project site is designated as 8.1 - Intensive Agriculture, 8.1/2.3 - Intensive Agriculture/Shallow Groundwater, and 8.1/2.5 - Intensive Agriculture/Flood Hazard under Kern County's current General Plan (Chapter 3, *Project Description*, Figure 3-5, *Existing General Plan Land Use Designations*).

The proposed project is located on approximately 3,469.87 acres of privately owned land currently under agricultural use in the Valley Region of Kern County. The project is located approximately 10 miles south of the City of Bakersfield near the unincorporated communities of Mettler, Kern Lake, and Lakeview. The project site is nestled between hilly and mountainous terrain to the south and to the east. The project area is divided into five sites (Sites 1 through 5) (see Chapter 3, *Project Description*, Figures 3-4A through 3-4E, *Site 1 – Site Plan through Site 5 – Site Plan*). Table 3-1, *Project Assessor Parcel Numbers and Corresponding Map Codes, Existing and Proposed Zoning and Acreage*, in Chapter 3 lists project Sites 1 through 5 and includes each site's Assessor's Parcel Number (APN), acreages, existing zonings, and associated Williamson Act designations. Site 1 includes approximately 160 acres and is the western-most site of the 5 project site areas. Access to Site 1 is provided from Old River Road through Site 2. Site 2 covers approximately 1,229 acres and is located immediately east of Site 1. Site 3 covers approximately 789 acres and is located immediately south of Site 2. Access to Sites 2 and 3 is via Old River Road and Copus Road. Site 4 is a stand-alone site (i.e., not geographically connected to Sites 1, 2, 3 or 5). Site 4 covers approximately 289 acres and is located east of Sites 1, 2, and 3, between Interstate (I-) 5 and State Route (SR-) 99 and has access from Copus Road. Site 5 would be preserved as on-site conservation land (and therefore would not be developed) and covers approximately 1,002 acres north of Site 2 and Site 3.

As discussed in Section 4.2, *Agriculture and Forestry Resources*, 9 of the 33 properties in the project boundary are identified on the Farmland Mapping and Monitoring Program (FMMP) as containing Important Farmland. The project contains a total of approximately 1,403.94 acres that are subject to active

Williamson Act Land Use contracts, all of which have documented petitions filed for the non- renewal and cancellation of each contract.

As shown in Chapter 3, *Project Description*, Figure 3-5, *Flood Zone*, the project site is designated as Zone "A" on the Flood Insurance Rate Map (FIRM) as issued by the Federal Emergency Management Agency (FEMA), which indicates the site is in an area of flood hazard.

The overall project site is not designated as a mineral recovery area by the Kern County General Plan; however, much of project Sites 1-3 and 5 are identified as a Mineral Resource Zone (MRZ) by the Department of Conservation's State Mining and Geology Board, see Chapter *3, Project Description* Figure 3-10. These lands are designated as MRZ-1 by State Mining and Geology Board, which indicates there is little likelihood for the presence of significant mineral resources.

Development in the area surrounding the project site includes predominately agricultural uses. Rural residential buildings are located in the unincorporated community of Mettler, located approximately 8.5 miles southeast of the proposed project site. The project is located within the administrative boundaries of the Kern County General Plan. Further, the project site is subject to the provisions of the Kern County Zoning Ordinance. The project site is not located within the boundaries of an Airport Influence Area as identified in the Kern County Airport Land Use Compatibility Plan (ALUCP). The closest private airport is the Skydive San Joaquin Valley Airport, which directly borders the eastern boundary of the project (Site 3). The nearest public use airport is Bakersfield Municipal Airport, located at 2000 South Union Avenue, Bakersfield, California 93307, approximately 18 miles north of the proposed project site.

Table 4.11-1, *Project Site and Surrounding Land Uses and Zoning Classifications*, details the surrounding land uses, including the General Plan designations and existing zoning.

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES AND ZONING CLASSIFICATIONS

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
Site 1	**Agriculture**	**8.1/2.5 (Intensive Agriculture/ Flood Hazard)**	**A (Exclusive Agriculture)**
North	Agriculture, Resource Management	8.1 (Intensive Agriculture), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)
East	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.5 (Resource Management)	A FSP (Exclusive Agriculture, Floodplain Secondary), A (Exclusive Agriculture
South	Agriculture, Mineral and Petroleum	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.4/2.3 (Mineral and Petroleum)	A (Exclusive Agriculture)
West	Agriculture	8.1 (Intensive Agriculture)	A (Exclusive Agriculture)
Site 2	**Agriculture**	**8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater); and 8.1/2.5 (Intensive Agriculture/Flood Hazard)**	**A (Exclusive Agriculture)**
North	Agriculture, Mineral and Petroleum, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.4/2.3 (Mineral and Petroleum), 8.5 (Resource Management)	A (Exclusive Agriculture), A-1 (Limited Agriculture)

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES AND ZONING CLASSIFICATIONS

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
East	Agriculture, Industrial, Highway	8.1 (Intensive Agriculture, min. 20-acre parcel size), 7.2 (Service Industrial), 6.3 (Highway, Commercial)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 PD (General Commercial, Precise Development), M-2 (Medium Industrial, Precise Development)
South	Agriculture	8.1 (Intensive Agriculture, min. 20-acre parcel size)	A FSP (Exclusive Agriculture, Floodplain Secondary), A (Exclusive Agriculture
West	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)
Site 3	**Agriculture**	**8.1/2.3 (Intensive Agriculture/Shallow Groundwater)**	**A (Exclusive Agriculture)**
North	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)
East	Agriculture, Industrial, Highway	8.1 (Intensive Agriculture, min. 20-acre parcel size 7.2 (Service Industrial), 6.3 (Highway, Commercial)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 PD (General Commercial, Precise Development), M-2 (Medium Industrial, Precise Development)
South	Agriculture	8.1 (Intensive Agriculture, min. 20-acre parcel size)	A FSP (Exclusive Agriculture, Floodplain Secondary), A (Exclusive Agriculture
West	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.3 (Extensive Agriculture), 8.5 (Resource Management)	A (Exclusive Agriculture)
Site 4	**Agriculture**	**8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater)**	**A (Exclusive Agriculture)**
North	Agriculture	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size)	A (Exclusive Agriculture), A-1 (Limited Agriculture)

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES AND ZONING CLASSIFICATIONS

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
East	Agriculture, Commercial, Industrial, Highway, Residential	8.1 (Intensive Agriculture, min. 20-acre parcel size), 7.1 (Light Industrial), 7.2 (Service Industrial), 6.2 (General Commercial), 6.3/2.5 (Highway Commercial), 5.3 (Maximum 10 Units/Net Acre)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 (General Commercial), M-1 (Light Industrial, Precise Development), M-2 (Medium Industrial, Precise Development), CH (Highway Commercial), R-1 (Low Density Residential, Mobile Home)
South	Agriculture, Commercial, Industrial, Highway	8.1/2.3/2.5 (Intensive Agriculture, min. 20-acre parcel size), 7.1 (Light Industrial), 7.2/2.3 (Service Industrial), 6.2 (General Commercial), 6.3 (Highway Commercial),	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 (General Commercial), M-1 (Light Industrial, Precise Development), M-2 (Medium Industrial, Precise Development), CH (Highway Commercial)
West	Agriculture, Commercial, Industrial, Highway	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size), 7.1 (Light Industrial), 7.2/2.3 (Service Industrial), 6.2 (General Commercial), 6.3 (Highway Commercial)	A (Exclusive Agriculture), A-1 (Limited Agriculture), C-2 (General Commercial), M-2 (Medium Industrial, CH (Highway Commercial)
Site 5	**Agriculture**	**8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater)**	**A (Exclusive Agriculture)**
North	Agriculture, Mineral and Petroleum, Resource Management	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size)	A (Exclusive Agriculture)
East	Agriculture, Industrial, Highway	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size),	A-1 (Limited Agriculture)
South	Agriculture	8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size),	A (Exclusive Agriculture)

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES AND ZONING CLASSIFICATIONS

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
West	Agriculture, Resource Management	8.1 (Intensive Agriculture, min. 20-acre parcel size), 8.1/2.5 (Intensive Agriculture/Flood Hazard), 8.5 (Resource Management)	A (Exclusive Agriculture)

Surrounding Land Uses

The project site is located in the valley region of Kern County, specifically in proximity to I-5, SR-99, and SR-166. The project site is located primarily on flat terrain, currently used for agricultural operations and/or designated for agricultural use.

Existing land uses surrounding the project site consist largely of agricultural parcels sparsely occupied by farm or rural residential uses. The primary zoning classification in the 5-mile radius surrounding the project site is A (Exclusive Agriculture). Rural residential buildings are located in the unincorporated community of Mettler, located approximately 8.5 miles from the proposed project site. There are no schools within 5 miles of the proposed project site. The nearest school is Arvin High School, located approximately 17 miles northeast at 900 Varsity Road, Arvin, California 93203.

There are three sensitive receptors (single-family residences) located in proximity to the project. The first receptor is a residential home located immediately adjacent to Site 4, south of Copus Road. The second receptor is a residential home located immediately adjacent to Site 2, located west of Old River Road. The third receptor is a residential home located north of Copus Road, approximately 0.40 mile east of Site 3. See Figure 3-3, *Aerial Photograph*, in Chapter 3 for receptor locations.

Surrounding land uses are classified 5.3 (Maximum 10 Units/Net Acre), 6.2 (General Commercial), 6.3 (Highway Commercial), 6.3/2.5 (Highway Commercial), 7.1 (Light Industrial), 7.2 (Service Industrial), 7.2/2.3 (Service Industrial), 8.1 (Intensive Agriculture),8.1/2.3 (Intensive Agriculture, min. 20-acre parcel size), 8.1/2.3/2.5 (Intensive Agriculture, min. 20-acre parcel size), 8.1/2.5 (Intensive Agriculture/Flood Hazard), 8.3 (Extensive Agriculture), 8.4/2.3 (Mineral and Petroleum), and 8.5 (Resource Management).

Surrounding land uses are located within the zoning designation of A (Exclusive Agriculture), A FSP (Exclusive Agriculture, Floodplain Secondary), A-1 (Limited Agriculture), C-2 (General Commercial), C-2 PD (General Commercial, Precise Development), CH (Highway Commercial), M-1 (Light Industrial, Precise Development), M-2 (Medium Industrial, Precise Development), and R-1 (Low Density Residential, Mobile Home).

4.11.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

There are no applicable 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.

As discussed above, the project site is located within Kern County General Plan and includes the following land use designations: Map Codes 8.1 (Intensive Agriculture), 8.1/2.3 (Intensive Agriculture/Shallow Groundwater), and 8.1/2.5 (Intensive Agriculture/Flood Hazard).

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 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.

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 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.

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 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 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.

1.9 Resources

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: 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 14: Emphasize conservation and development of identified mineral deposits.

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.

Policy 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.

Policy 25: Discourage incompatible land use adjacent to Map Code 8.4 Mineral and Petroleum areas.

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.

Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.

Measure G: Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation.

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).

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 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 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 Voltalie Organic Compounds (VOC) producing trees on landscape plans.

d. Use 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

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: 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.

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.

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.

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).

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 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 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-footright-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. 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.

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 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.

Policy 2: Start a program that monitors truck traffic operations.

Policy 3: Promote a monitoring program of truck lane pavement condition.

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 2: Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health.

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 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.

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 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.

4.10: Abandoned Open Shafts and Wells

In some areas of the County, there exist abandoned mine shafts that, if not secured, contribute to the injury of or fatality to unsuspecting members of the public. Many such shafts are within lands owned and controlled by various agencies of the Federal government.

Policies

Policy 1: The County should protect residents from the hazards of improperly abandoned mine shafts.

Policy 2: The County should protect residents from the hazards associated with development in areas where wells have been drilled and abandoned for exploration and/or production of oil and natural gas.

Implementation Measure

Measure B: Support the construction site review program of the Department of Oil, Gas and Geothermal Resources that ensures that wells are precisely located, properly plugged and abandoned, and tested for leakage prior to development of the area.

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/Sustainable Communities Strategy (RTP/SCS)

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 effect described under the thresholds of significance below occurs as a result of the project. The evaluation of the project impacts is based on professional judgement, analysis of the County's land use policies and the significance criteria established in *CEQA Guidelines* Appendix G, which the County has determined appropriate for this EIR.

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 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;

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.

Kern County determined in the Notice of Preparation/Initial Study that the following environmental issue areas would result in no impacts or less-than-significant impacts and, therefore, are scoped out of this EIR. Refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas:

a. Physically divide an established community

As detailed in the IS/NOP, the components of the project would be developed on vacant, undeveloped land that has been historically used for agricultural uses. Land uses surrounding the project site are primarily open grazing land, or land in agricultural production. The proposed project is located approximately 3 miles from the nearest established community, which is the unincorporated area of Mettler. Therefore, the proposed project would not have the ability to physically divide an established community and there would be no impact. No further analysis of this issue was including in this EIR.

Project Impacts

Impact 4.11-1: 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 multiple Conditional Use Permits, General Plan Amendments (Circulation), and Williamson Act Land Use Contract Cancellations from the Kern County Planning Commission and the Kern County Board of Supervisors to allow for the construction and operation of a 300 megawatt (MW) solar facility and up to 100 MW battery energy storage system.

The project site is designated as 8.1 – Intensive Agriculture, 8.1/2.3 – Intensive Agriculture/Shallow Groundwater, and 8.1/2.5 – Intensive Agriculture/Flood Hazard under Kern County's current General Plan (see Figure 3-5, *Existing General Plan Land Use Designations*, in Chapter 3). No change to the existing land use designations is required or proposed with project implementation, and 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 3-6, *Existing Zoning*, the project site has a zone classification of A (Exclusive Agriculture) within Zone Maps 159, 160, and 161. 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.

CUPs would allow for the construction and operation of four solar facilities with a total generating of approximately 300 MW AC of renewable energy (broken down by site, below) including up to 100 MW of combined energy storage (for all sites), within the A (Exclusive Agriculture) Zone District (in Zone Maps 159, 160, and 161) pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance. Please note the total MW listed for each site represents the maximum MW that could be developed on the site; however, total MW for the entire project site would not exceed 300 MW.

- **Site 1** (up to 20 MW AC)
  - CUP No. 9, Map No. 159 for approximately 160 acres
- **Site 2** (up to 235 MW AC)
  - CUP No. 27, Map No. 160 for approximately 1,229.37 acres
- **Site 3** (up to 125 MW AC)
  - CUP No. 28, Map No. 160 for approximately 789.21 acres
- **Site 4** (up to 30 MW AC)
  - CUP No. 27, Map No. 161 for approximately 289.11 acres
- **Site 5** - Onsite conservation lands for benefit of solar project (proposed conservation area)
  - CUP No. 29, Map 160 for approximately 996.98 acres

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 3-8, *Williamson Act - Active and Nonrenewals*, the project sites are within an area that has historically been used for agricultural crop production and a number of parcels within the proposed project area are subject to 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 Cancellations include the following:

- **No. 21-01**
  - Cancellation of approximately 289.11 acres from Contract No. 28397, Book 4273, page 13
- **No. 21-02**
  - All APNs associated with WALUC Cancellation Number 21-02 are located within project Site 5 (proposed conservation area); this acreage would be preserved as-is and should not be considered as acreage to be removed (Contract No. 12231, Book 4492, page 243).
- **No. 21-03**
  - Cancellation of approximately 427.65 acres from Contract No. 10965, Book 4373, page 24
- **No. 21-04**
  - Cancellation of approximately 338.35 acres from Contract No. 28386, Book 4272, page 933

The project proponent is also requesting amendments to the Circulation Element of the Kern County General Plan to remove a number of road reservations identified in the Circulation Element to increase project site optimization, refer to Chapter 3, *Project Description*, Figure 3-11, *Proposed Circulation Element Amendments*. General Plan Amendment to the Circulation Element of the Kern County General Plan to remove future road reservation on the section and mid-section lines within the project boundaries (refer to Figure 3-11, *Proposed Circulation Element Amendments*):

- General Plan Amendment No. 2, Map No. 159.
- General Plan Amendment No. 3, Map No. 160
- General Plan Amendment No. 4, Map No. 161

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 12 and 13 boundaries, 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 3-9, *Existing Zoning*, in Chapter 3, *Project Description*, the Kern County Zoning Ordinance designates portions of the project site as being within the A (Exclusive Agriculture) zone district. Pursuant to Section 19.12.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for A (Exclusive Agriculture), subject to a CUP. The project proponent is requesting a CUP to allow for the construction and operation of a 300 MW solar facility with up to 100 MW of battery storage capacity within the aforementioned Zoning Districts in Maps 159, 160 and 161. 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 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, and impacts related to consistency with the zoning ordinance would be *less than significant*.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope of analysis for this chapter of the EIR is southern portion of the San Joaquin Valley. 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 region. As described in more detail in Chapter 3, *Project Description*, Table 3-4, *Cumulative Projects List*, of this EIR, 29 projects are proposed within the geographic scope, three of which are solar projects. 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 site would increase the urbanization and result in the loss of agricultural space within the San Joaquin Valley region of Kern County. 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 Policies for Land Use* below, the project would be generally consistent with the goals and policies of the Kern County General Plan. In addition, with approval of the CUP, Williamson Act contract cancellation, and GPA, development of solar facilities for the 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 undergo separate 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 less than significant levels.

In the future, the project could consequently result in the abandonment of the solar panel facilities developed under this project due to 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. Unlike other facilities that, once constructed, can be retrofitted and utilized for another specific use, solar power generation facilities, such as the project, have little opportunity for other uses should the project not be in operation. In an effort to restore the land use character of the project site in the event that solar facilities are no longer viable commercial operations, or at the end of the useful life of the solar facility (which has a tentative life of 35 years), the project would implement Mitigation Measure MM 4.11-1. Mitigation Measure MM 4.11-1 would require the implementation of a Decommission 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. Based on the above, and with the implementation of Mitigation Measure MM 4.11-1, cumulative land use impacts would be considered less than significant.

Mitigation Measures

MM 4.11-1 **Decommissioning Plan.** Prior to issuance of any building permit, the project proponent shall provide a Decommission Plan for review and approval by the Kern County Engineering, Surveying, and Permit Services Department. The Decommission Plan would be carried out by the proponent or a County-contracted consulting firm(s) at a cost to be borne by the project proponent. 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. The repurposing, resale and salvage value of all personal property, including the solar panels and support structures, and real property interests, if any, held by the project proponent on the date of original valuation and as adjusted annually by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s), as described below, 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 deconstruction of the site as identified in 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 deconstruction 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 30 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed every 5 years by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate that adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.

Once deconstruction has occurred, financial assurance will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project operator.

Should the solar field not be in operational condition for a consecutive period of 24 months due to reasons within the sole and reasonable control of the project owner, the site shall be

deemed abandoned and shall be removed within 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 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 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 after notice to the owner and a written determination by the Kern County Planning and Natural Resources Director be permitted to remain in place for more than 48 months from the date, the solar facility was first deemed abandoned by written determination by the Kern County Planning and Natural Resources Director.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

Project Consistency with the Kern County General Plan

Table 4.11-2, *Consistency Analysis with Kern County General Plan Policies for Land Use*, 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.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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 MM 4.7-1, MM 4.7-3 and MM 4.10-1	Consistent with this policy, the project would develop a solar PV power generating facility that is not located on a hazardous site. See Section 4.9, *Hazards and Hazardous Materials*, of this EIR. Additionally, surrounding areas south of Site 1 and Site 2 are designated as 8.1/2.5 (Intensive Agriculture/Flood Hazard). As described in Section 4.7, *Geology and Soils*, 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 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 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, Mitigation Measure MM 4.7-1 would ensure that the project shall not place habitable structures within 500 feet of mapped ground fractures unless a full investigation is completed by a licensed geotechnical professional. Mitigation Measure MM 4.7-3 also requires implementation of recommendations from a final design-level Geotechnical Engineering Report for the project, which would ensure site stability to the maximum extent possible during project construction and operation. As described in Section 4.10, *Hydrology and Water Quality*, of this EIR, portions of the project site are located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Implementation of Mitigation Measure MM 4.10-1 would require preparation of a drainage plan that would design project facilities to have 1 foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures and grading for the project would be designed so that water surface elevations during flood events would not be increased by more than 1 foot. Further, the project would be developed in accordance with the Kern County General Plan and Floodplain Management Ordinance. Final review of the 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 project would not pose

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		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 to 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, *Physical and Environmental Constraints*, Goal 1, of the Kern County General Plan, above.
Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.	Consistent	Hazards and hazardous materials impacts are evaluated in Section 4.9, *Hazards and Hazardous Materials*, 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.
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.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, *Hydrology and Water Quality*, of this EIR. As described therein, project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the project would be consistent with this policy.
Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, *Hydrology and Water Quality*, of this EIR. As described therein, project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the 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	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, *Hydrology and Water Quality*, of this EIR. As described therein, the project would not substantially increase the potential for flooding beyond existing conditions. Flooding in this location would not result in a

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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.		safety hazard, as the project would not establish a substantial permanent population onsite. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the project would be consistent with this policy.
Policy 11: Protect and maintain watershed integrity within Kern County.	Consistent with implementation of Mitigation Measure MM 4.7-4 and MM 4.9-2	As discussed in Sections 4,7, *Geology and Soils and* 4.9, *Hazards and Hazardous Materials*. The project would implement best management practices during construction to avoid impacts to water quality, as required by Mitigation Measure 4.7-4. The project would also implement Mitigation Measure MM 4.9-2, 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 with implementation of Mitigation Measures MM 4.7-4 and MM 4.10-1	The project would implement Mitigation Measures MM 4.7-4 and MM 4.10-1. As discussed in Section 4.7, *Geology and Soils*, grading would be subject to compliance with the Kern County National Pollutant Discharge Elimination System (NPDES) and the implementation of required Best Management Practices (BMPs) would minimize the potential for erosion or loss of topsoil. Since project construction would disturb over an acre of ground, the project operator would conform to the requirements of NPDES General Construction Permit Program through the preparation of a Stormwater Pollution Prevention Plan (SWPPP), including erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. Implementation of Mitigation Measure MM 4.7-4 would incorporate BMPs consistent with the Kern County NPDES General Construction Permit Program and would require the project proponent to prepare an Erosion and Sedimentation Control Plan as well as a SWPPP. The project would also implement Mitigation Measure MM 4.10-1 which would require the preparation of a grading and drainage plan. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards. The 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 (see Section 4.10, *Hydrology and Water Quality*, of this EIR for more details). A grading permit would be obtained from the County prior to commencement of construction activities. According to Chapter 17.28 of

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		the Kern County Grading Ordinance, this includes submittal of grading plans to the County for review prior to issuance of a grading permit and grading activities on the project site. County review of grading plans would ensure that appropriate erosion control measures have been implemented on site. Therefore, the project would be consistent with this measure.
Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, *Hydrology and Water Quality*, of this EIR. The project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the 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 with implementation of Mitigation Measure MM 4.10-1	As described in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the project would be consistent with this measure
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 with implementation of Mitigation Measure MM 4.10-1	See 1.3, *Physical and Environmental Constraints,* Measure H, of the Kern County General Plan, above.
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.	Consistent with implementation of Mitigation Measure MM 4.7-4	Section 4.10, *Hydrology and Water Quality*, discusses impacts related to soil-disturbing activities and required compliance with Kern County's NPDES applicability regulation, which requires projects to comply with the State Water Resources Control Board's Construction General Permit. In addition, as discussed in Section 4.7, *Geology and Soils*, of this EIR, grading would be subject to compliance with the Kern County NPDES and the implementation of required BMPs would minimize the potential for erosion or loss of topsoil. Since project construction would disturb over an acre of ground, the project operator would conform to the requirements of NPDES General Construction Permit Program through the preparation of a SWPPP, including erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. Implementation of Mitigation Measure MM 4.7-4 would incorporate BMPs consistent with the Kern County NPDES General

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		Construction Permit Program and would require the project proponent to prepare an Erosion and Sedimentation Control Plan as well as a SWPPP.
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 Measure MM 4.14-2 and MM 4.14-3	As discussed in Section 4.14, *Public Services*, of this EIR, implementation of Mitigation Measures MM 4.14-2 and MM 4.14-3 would provide a Cumulative Impact Charge (CIC) and Supplemental Cumulative Impact Charge (SCIC) 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.
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, *Utilities and Service Systems*, of this EIR. An analysis of water supplies available to serve the project is provided therein. A project-specific Water Supply Assessment was prepared for this analysis. Based on estimated project construction and operational water demands per the report, there is sufficient water available to meet the future water demands of the project during normal, single dry, and multiple dry years through the life of the project and impacts related to water supply would be less than significant. As such, there would be sufficient water supply for other uses in Kern County.
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 Measures MM 4.14-2 and MM 4.14-3	The project would construct and operate up to a 300 MW solar energy facility. The project consists of 70 kV and 220 kV gen-tie line that would connect the collector substations to the existing PG&E Wheeler Ridge Substation. The project intends to construct gen-tie lines within public rights-of-way and is may utilize private land through transmission easement in order to provide alternate paths in the event that the public rights-of-way routes are unavailable. This infrastructure improvement would be fully funded by the project 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, *Public Services*, the project would implement Mitigation Measures MM 4.14-2 and MM 4.14-3 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

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		economy and assuring the provision of adequate public services and facilities.
Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.	Consistent	Public utility impacts are evaluated in Section 4.17, *Utilities and Service Systems*. As described therein, the project would have less-than-significant impacts on water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities.
Policy 6: The County will ensure adequate fire protection to all Kern County residents.	Consistent with implementation of Mitigation Measures MM 4.14-2 and MM 4.14-3	See 1.4, *Public Services and Facilities*, Goal 1, above.
Policy 7: The County will ensure adequate police protection to all Kern County residents.	Consistent with implementation of Mitigation Measures MM 4.14-2 and MM 4.14-3	See 1.4, *Public Services and Facilities*, Goal 1, above.
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 Measures MM 4.14-2 and MM 4.14-3	See 1.4, *Public Services and Facilities*, Goal 1, above.
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, *Utilities and Service Systems*, of this EIR. The project would result in less-than-significant impacts to utilities and service systems. Furthermore, the project would include the development of a solar PV power generating facility designed to produce approximately 300 MW of solar power that would be delivered to the grid, reducing dependence on fossil fuel-based energy.
Measure D: Involve utility providers in the land use and zoning review process.	Consistent	See 1.4, *Public Services and Facilities*, Policy 3, above. In addition, as described in Chapter 2, *Introduction*, of this EIR, CEQA requires lead agencies, in this case Kern County, to solicit and consider input from other interested agencies, citizen groups, and individual members of the public, including utility providers.
Measure J: Ensure that the Superintendent of Schools and the respective school districts are informed of development proposals and are	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. In response to this notice, the Superintendent of Schools commented

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
afforded the opportunity of evaluating their potential effect on the physical capacity of school facilities.		that the project would have no significant effects on district's facilities so long as statutory school facility fees are collected. See 1.4, *Public Services and Facilities*, 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 Measures MM 4.14-1, MM 4.14-2, and MM 4.14-3	Impacts to fire protection services are evaluated in Section 4.14, *Public Services*, 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. Mitigation Measures MM 4.14-2 and MM 4.14-3 require a Cumulative Impact Charge (CIC) and a Supplemental Cumulative Impact Charge (SCIC) 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 pubic 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 project would preclude livestock grazing on the site. Other uses besides agriculture, including solar energy generation and storage, are permitted within the A District with the approval of a CUP. The project would not involve additional changes 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. 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. Furthermore, the installation of photovoltaic panels and gen-tie lines would not preclude future onsite mineral resource development, should the project site be determined to contain mineral resources in the future. Therefore, the project would be consistent with this goal.
Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.	Consistent	See 1.9, *Resource*, Goal 1, above. As discussed in Section 4.12, *Mineral Resources*, of the EIR, the project site where the solar arrays would be developed is not designated as a mineral recovery area by the Kern County General Plan, nor is it identified as a mineral resource zone by the

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		Department of 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: Ensure 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. Furthermore, the placement of solar arrays at the project site may deter other urban and suburban land uses from being developed nearby. The project would not preclude the existing nearby agricultural, mineral, and petroleum extraction uses from operating.
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 a solar PV power generating facilities designed to produce approximately 300 MW of solar power and to store up to 100 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, *Agriculture and Forestry Resources*, implementation of the proposed project would have a significant impact and would require the adoption of a Statement of Overriding Considerations. In addition, while the project site is currently under a Williamson Act contract, the land owner petitioned for cancellation of the Williamson Act contract in 2021, pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest. As described further in Section 4.2, *Agriculture and Forestry Resources*, benefits from cancellation of the Williamson Act contract would substantially outweigh the objectives of the Williamson Act. With approval of the cancellation of the Williamson Act contract, the project would not conflict with this goal.
Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.	Consistent	Consistent with this policy, the project is the development of a solar PV power generating facilities designed to produce approximately 300 MW of solar power. The project would develop a clean energy source that would create fewer fossil fuel emissions; thus, protecting the environment.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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 Kern County 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, *Resource*, Goal 5, of the Kern County General Plan, above. As described further in Section 4.2, *Agriculture and Forestry Resources*, benefits from cancellation of the Williamson Act contract would substantially outweigh the objectives 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, *Resource*, 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 Measures MM 4.7-3 and MM 4.10-1	As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project would be required to adhere to the Kern County Development Standards and Kern County Code of Building Regulations which require site drainage plans that include development standards designed to protect water quality. Specifically, the project proponent would be required to prepare and submit a drainage plan to the Kern County Public Works Department, for approval of post-construction structural and nonstructural BMPs that could include Low Impact Development (LID) features such as drainage swales for collection of runoff prior to offsite discharge. Routine structural BMPs are intended to address water quality impacts related to drainage that are inherent in development. Consistent with this policy, the project would require the submission of a drainage plan to the County for review and would implement Mitigation Measure MM 4.10-1, which requires a final hydrologic study and drainage plan designed to evaluate and minimize potential increases in runoff from the project site. In addition, as discussed in Section 4.7, *Geology and Soils*, of this EIR, the project would implement Mitigation Measure MM 4.7-3, which would require the project to submit grading plans accompanied by a soils engineering report, engineering geology report, and

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		drainage calculations 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 Mitigation Measure MM 4.7-3 would ensure that excessive grading does not occur. Therefore, with implementation of these mitigation measures, the project would be consistent with this goal to minimize the alternation of natural drainage areas.
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, *Resource*, 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, *Mineral Resources*, 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 majority of the primary project area is located on lands classified as MRZ-1 by the CGS, as illustrated on Figure 3-10, *Mineral Resource Zones*, of Chapter 3, *Project Description*. This designation indicates that there is little likelihood for the presence of significant mineral resources. There are existing mineral rights holders to the project site; however, the project applicant is working directly with mineral rights holders to ensure impacts to potential mineral rights would not occur.
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 300 MW of solar power and 100 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 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.	Consistent	As discussed in Section 4.12, *Mineral Resources*, of this EIR, the project site where the solar arrays would be developed is not designated as a mineral recovery area 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. In addition, the project site is not located within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts; however,

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		the project site is partially within the General Plan designation of 8.4 (Mineral and Petroleum). Areas immediately surrounding the project site are also not classified as MRZs. As analyzed in Section 4.12, *Mineral Resources*, of this EIR, given the characteristics of the project type of location, the project would not interfere with nearby mineral extraction operations and would not result in the loss of land designated for mineral resources. As such, no lands classified as MRZ-2 would be encroached upon from incompatible land uses.
Policy 25: Discourage incompatible land use adjacent to Map Code 8.4 Mineral and Petroleum areas.	Consistent	See 1.9, *Resource*, 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 3,469.87 acres of privately owned land in unincorporated portions of Kern County. The project site is composed of five separate sites with the approximately acreage of (in acres): 160; 1,209; 788; 289.11; and 1,002, respectively. While portions of the project sites are currently under a Williamson Act contract, multiple landowners have petitioned 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. With the cancellation of the Williamson Act contract, the project site would continue to be 3,447 acres and individual parcel sizes would continue to exceed 80 acres. Therefore, the project would be consistent with the minimize acreage sizes specified under this measure.
Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.	Consistent	As discussed in Section 4.2, *Agriculture and Forestry Resources*, of this EIR, approximately 8.6% the project site contains Prime Farmland identified by the California Department of Conservation. As described further in Section 4.2, *Agriculture and Forestry Resources*, the project would represent only a 0.04 percent loss of the County's overall Prime Farmland acreage. Furthermore, benefits from conversion of Prime Farmland would outweigh objectives from this Measure.
Measure G: Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation.	Consistent	As discussed in Section 4.2, *Agriculture and Forestry Resources*, while the project site is currently under a Williamson Act contract, multiple landowners have petitioned 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. Therefore, with

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		approval of the cancellation of the Williamson Act contract, the project would not conflict with 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, *Resource*, 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 Numbers 12 and 13 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 300 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 project would develop a solar PV power generating facilities that are not located on a hazardous site. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding 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.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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 Measures MM 4.14-2 and MM 4.14-3	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 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 4.12-2.	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 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 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 9, above.
Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	Consistent	See 1.4, *Public Facilities and Services*, Policy 9, above.
Measure D: Involve utility providers in the land use and zoning review process.	Consistent	See 1.4, *Public Facilities and Services*, Policy 9, above.
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	Consistent	Water and wastewater impacts are evaluated in Section 4.10, *Hydrology and Water Quality*, of this EIR. The project would not require new wastewater disposal systems to be constructed, as there would be no permanent employees on the project site; therefore, no septic tanks or permanent toilets would be required and no permanent water source would be necessary. Final review of the project by the Kern County Planning and Natural Resources

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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.		Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the 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	Air quality and GHG emissions impacts are evaluated in Sections 4.3, *Air Quality*, and 4.8, *Greenhouse Gas Emissions*, of this EIR. Consistent with this policy, the project would have less-than-significant project-level impacts on air quality emissions. The project's consistency with the existing air quality plan is discussed under Section 4.3 and the project was determined to be consistent because the project would not exceed Kern County's or the SJVAPCD's criteria air pollutant emission thresholds. The project's emissions would be negligible in comparison to the air basin's total emissions and the project would not exceed the SJVAPCD's criteria air pollutant thresholds.
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	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.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
(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.	Consistent with implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, MM 4.3-4, and MM 4.3-6.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. As discussed therein, implementation standard construction practices would be employed, as required by Mitigation Measures MM 4.3-1, MM 4.3-2, MM 4.3-4, and MM 4.3-6 to reduce fugitive dust emissions. Some of these practices include watering of the active sites two times per day depending on weather conditions, limiting work during windy conditions, seeding and watering excavated earth material, and limiting vehicle speeds. MM 4.3-2 also requires a site-specific dust control plan that would serve to minimize fugitive dust emissions during the project construction. The project would comply 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 through MM 4.3-9.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. As discussed in that section, implementation of standard construction and decommissioning practices, as required through mitigation measures, would be employed to reduce PM_{10} and $PM_{2.5}$ emissions. Particulate matter (PM_{10} and $PM_{2.5}$) emissions would be controlled though the implementation of Mitigation Measures MM 4.3-1 through 4.3-9. These mitigation measures require construction and operational compliance with rules and regulations set forth by the San Joaquin Valley Air Pollution Control District, preparation of a site-specific dust control plan, written notice to the public (neighboring parcels), and other regulatory measures fully described in Section 4.3. The project would comply with the adopted rules and regulations of the San Joaquin Valley Air Pollution Control District on ministerial permits.
Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern	Consistent with implementation of Mitigation	See 1.10.2, *Air Quality*, Policies 18 through 21, above. This EIR serves to comply with this policy.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
County Air Pollution Control District toward air quality attainment with federal, state, and local standards.	Measures MM 4.3-1 through MM 4.3-9.	
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, *Air Quality*, 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 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.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9.	See 1.10.2, *Air Quality*, Policies 18 through 21, above. This EIR serves to comply with this policy.
Measure J: The County should include PM_{10} control measures as conditions of approval	Consistent with implementation of Mitigation	See 1.10.2, *Air Quality*, Policies 18 through 21, above. This EIR serves to comply with this policy.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
for subdivision maps, site plans, and grading permits.	Measures MM 4.3-1 through MM 4.3-9.	
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	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR. As part of the cultural resources analysis, a cultural resources records search was conducted by staff at the Southern San Joaquin Valley Information Center at California State University, Bakersfield.
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 MM 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 Mitigation Measures MM 4.7-6 through MM 4.7-8	Paleontological resource impacts are evaluated in Section 4.7, *Geology and Soils*, of this EIR. Mitigation Measures MM 4.7-6 through MM 4.7-8 which would reduce potential impacts to known paleontological resources through hiring a qualified paleontologist shall be retained to monitor all ground-disturbing activity, document, and implement measures as needed. These mitigation measures would address the preservation of paleontological resources.
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, *Tribal Cultural Resources*. Consistent with this measure, notification regarding the project would be 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	Consistent with implementation of Mitigation Measure MM 4.5-3	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR. This EIR serves to comply with this measure and includes Mitigation Measure MM 4.5-3, which would require consultation with the Native American monitor(s) to conduct a Cultural Resources Sensitivity Training for all personnel working the project.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
discretionary projects that are subject to a CEQA document.		
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 4.4-22, MM 4.9-1 through 4.9-4, MM 4.10-1, and MM 4.14-1 through 4.14-5.	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 4.4-22. Jurisdictional waters would also be preserved with implementation of Mitigation Measure MM 4.4-22. As described in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. As discussed in Section 4.9, *Hazards and Hazardous Materials*, Mitigation Measures MM 4.9-1 through MM 4.9-4 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. As discussed in Section 4.14, *Public Services*, of this EIR, implementation of Mitigation Measures MM 4.14-1 through 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 4.4-22	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-22. Additionally, the project would be developed and operated in accordance with all local, state and federal laws pertaining to the preservation of sensitive species.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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 4.4-22	Biological Resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-22. 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 4.4-22	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-22 would increase cooperative efforts with local, State, and federal agencies to support threatened and endangered plant and wildlife. As noted in Section 4.4, *Biological Resources*, a portion of the project footprint is within the boundaries of the Maricopa Sun Solar Complex HCP and the associated State Incidental Take Permit (ITP. The HCP and ITP allows for construction and operation of a solar PV facility within the project footprint, and therefore the project would not conflict with implementation of the HCP or ITP.
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, *Threatened and Endangered Species*, 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 with implementation of Mitigation Measure MM 4.4-21 and MM 4.4-22	Biological resource impacts and impacts to riparian areas, are evaluated in Section 4.4, *Biological Resources*, of this EIR. As discussed therein, one sensitive plant community, Valley Sink Scrub, is expected to be impacted by project implementation; therefore, Mitigation Measure MM 4.4-21 would be implemented to reduce this impact. Additionally, while it is not anticipated that jurisdictional aquatic resources would be directly impacted by the proposed solar array infrastructure, an approximate 3-mile portion of the proposed gen-tie route in Zone Map #160 may permanently impact

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		approximately 0.3 acre of these resources. In addition to direct impacts to resources, construction activities have the potential to cause storm water runoff to jurisdictional resources. Mitigation Measure MM 4.4-22 would reduce this potential impact and would ensure the project is consistent with this policy. Additionally, there were no small-scale, local movement corridors such as drainages or riparian habitat identified within the project footprint during biological resource surveys. Local irrigation canals and ditches may be used by local wildlife to travel through the vicinity, although these irrigation canals and ditches will not be impacted by the project.
Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.	Consistent	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, 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 Measures MM 4.4-2, MM 4.4-5, MM 4.4-6, MM 4.4-10, MM 4.4-16, and MM 4.4-22	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. Consistent with this measure, the project would implement mitigation measures that require consultation with the resource agencies, as applicable, including Mitigation Measures MM 4.4-2, MM 4.4-5, MM 4.4-6, MM 4.4-10, MM 4.4-16, and MM 4.4-22. The County has and will respond to all comments from reviewing agencies during the CEQA process.
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.	Consistent	See 1.10.5, *Threatened and Endangered Species*, Policy 28, above.
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 4.7-4 and MM 4.10-1	Water quality impacts are evaluated in Section 4.10, *Hydrology and Water Quality*, of this EIR. Consistent with this policy, the 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. In addition, per Mitigation Measure MM 4.7-4 in Section 4.7, *Geology and Soils*, of this EIR, the project would be required to implement a SWPPP, which would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality, and would be applicable to all areas of the project, including the solar fields and

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		the gen-tie line. In addition, prior to the commencement of construction activities, the project proponent would be required to adhere to the requirements of the Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage onsite, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.
Policy 40: Encourage utilization of community water systems rather than the reliance on individual wells.	Consistent	Section 4.10, *Hydrology and Water Quality*, of this EIR, provides analysis of the project's proposed groundwater use and potential conflicts with groundwater supplies and/or groundwater recharge. Water for project operation would be supplied by the existing groundwater wells, and is considered a relatively small volume needed compared to that of typical agricultural operations previously used on site and within the greater project area. No new groundwater wells would be drilled under the project.
Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.	Consistent	Section 4.17, *Utilities and Service Systems*, of this EIR, provides an analysis of water supplies available to serve the project. A project-specific Water Supply Assessment was prepared for this analysis. A project-specific Water Supply Assessment was prepared for this analysis. Based on estimated project construction and operational water demands per the report, there is sufficient water available to meet the future water demands of the project during normal, single dry, and multiple dry years through the life of the project and impacts related to water supply would be less than significant.
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, *Resources*, 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, *Hydrology and Water Quality*, 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. The project would be required to submit a drainage plan to the County for review and would implement Mitigation Measure MM 4.10-1, which requires a final hydrologic study and drainage plan designed to evaluate and minimize potential increases in runoff from the project site.
Measure Y: Promote efficient water use by utilizing measures such as: (i) Requiring water-conserving design and equipment in	Consistent	See 1.4, *Public Facilities and Services*, Goal 5, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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		
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 4.1-5 through MM 4.1-7	Aesthetic impacts are evaluated in Section 4.1, *Aesthetics*, of this EIR. During construction, lighting would be limited during non-daylight hours and would be used in such a way that minimal illumination would be provided. Construction would temporarily and minimally increase glare conditions. Operational lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Lighting during construction and operation would be directed downwards and shielded to focus illumination and to minimize light trespass. Glare conditions would increase during operation with the addition of the solar modules across the project site and with the addition of the energy storage facility and collector substation. Mitigation Measure MM 4.1-5 would require compliance with the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance) and would result in the minimum illumination needed to achieve safety and security objectives. Mitigation Measure MM 4.1-6 would require that solar panels and hardware are designed to minimize glare and spectral highlighting. Finally, Mitigation Measure MM 4.1-7 would require that all onsite buildings utilize non-reflective materials. With implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, impacts related to light and glare would be less than significant.
Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7	See 1.10.7, *Light and Glare*, Policy 47, above.
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.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7	See 1.10.7, *Light and Glare*, Policy 47, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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, *Physical and Environmental Constraints*, 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, *Transportation*, of this EIR. Consistent with this goal, the project would maintain a minimum LOS C or better for all roads throughout the County during construction and operation.
2.3.3 Highways Plan		
Goal 5: Maintain a minimum Level of Service (LOS) D.	Consistent	Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this goal, the project would maintain a minimum LOS C or better for all roads throughout the County during construction and operation.
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, *Transportation*, 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, in cooperation with the County, would negotiate necessary easements to allow this.
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	Consistent	See 2.3.3, *Highway Plan*, Policy 1, of the Kern County General Plan, above. The project includes a request for an amendment to the Circulation Element of the Kern County General Plan to eliminate future road reservations along portions of the section and mid-section lines of Sections 11, 12, 13, and 14, to allow for efficient placement of solar panels. The County allows for removal of the reserved section and mid-section lines when approved by the Kern County Board of Supervisors. Approval of this request by the Board of Supervisors would result in consistency with the General Plan Circulation Element.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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 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.	Consistent	Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this measure, the 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.
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.	Consistent	See 2.3.3, *Highway Plan*, Policy 3, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Planning Department can help developers and property owners in identifying where planned circulation is to occur.		
2.3.4 Future Growth		
Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.	Consistent	See 2.3.3, *Highway Plan*, Policy 3, of the Kern County General Plan, above.
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.	Consistent with implementation of Mitigation Measure MM 4.15-1	Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this policy, the project would maintain a minimum LOS C for all roads throughout the County or better. Additionally, implementation of Mitigation Measure MM 4.15-1 would require the preparation of a Construction Traffic Control Plan to be reviewed and approved by Kern County and Caltrans, which would further reduce impacts to traffic and transportation.
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	Consistent	See 2.3.3, *Highway Plan*, Policy 1, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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.	Consistent	Consistent with this policy, the project proponent would fund improvements to driveways that provide access to any County, city, or State roads.
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.	Consistent	The project would not develop a public road. However, consistent with this policy, the project proponent would be required to negotiate approval with the County where any proposed private access driveways would intersect public right-of-way.
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 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 implementation of Mitigation Measure MM 4.15-1	Traffic impacts are evaluated in Section 4.15, *Transportation*, of this EIR. Consistent with this goal, the project would maintain a minimum LOS C for all roads throughout the County. Additionally, implementation of Mitigation Measure MM 4.15-1 would require the preparation of a Construction Traffic Control Plan to be reviewed and approved by Kern County and Caltrans, which would further reduce impacts to traffic and transportation.
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).

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated the Kern COG as the County's Congestion Management Agency (CMA).	Consistent	See 2.3.10, *Congestion Management Program*, Goal 1 and 2, above.
Policy 2: The CMA is responsible for developing, adopting, and annually updating a CMP. The CMP is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also the Kern COG), 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: The Kern COG 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.	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	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, which would ensure the provision of heavy truck transportation resulting from project implementation in the safest way feasible.
Goal 2: Reduce potential overweight trucks.	Consistent	See 2.5.1, *Trucks and Highways*, Goal 1, above.
Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.	Consistent	See 2.5.1, *Trucks and Highways*, Goal 1, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.	Consistent	As discussed in Section 4.15, *Transportation*, of this EIR, 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. The need for and number of escorts, California Highway Patrol escorts, for oversized loads 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.
Policy 2: Start a program that monitors truck traffic operations.	Consistent	Consistent with this policy, as stated in Section 4.15, *Transportation*, of this EIR, with implementation of Mitigation Measure MM 4.15-1, a Construction Traffic Control Plan would be submitted to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 6, as appropriate, for approval.
Policy 3: Promote a monitoring program of truck lane pavement condition.	Consistent	See 2.5.1, *Trucks and Highways*, Policy 2, above.
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, *Hazards and Hazardous Materials*, 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 4.9-2, 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, *Transportation of Hazardous Materials*, 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, *Transportation of Hazardous Materials*, Goal 1, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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, *Transportation of Hazardous Materials*, 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, *Noise*, of this EIR. As discussed in that section, the 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 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, *Sensitive Noise Areas*, Goal 1, above.
Policy 2: Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health.	Consistent	See 3.3, *Sensitive Noise Areas*, 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, *Sensitive Noise Areas*, 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. However, as noted in Section 4.13, *Noise*, of this EIR, noise levels above 65 dBA exterior (L_{dn}) were not identified from stationary source on the project site.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.	Consistent	See 3.3, *Sensitive Noise Areas*, Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.13, *Noise*, of this EIR.
Policy 7: Employ the best available methods of noise control.	Consistent	See 3.3, *Sensitive Noise Areas*, 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 project would be consistent with existing 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 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, *Sensitive Noise Areas*, 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: 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	Consistent	Consistent with this measure, the project will prepare an acoustical analysis in accordance with the requirements of Chapter 3, *Noise Element*, Measure G, of the Kern County General Plan.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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.	Consistent	Consistent with this measure, a noise assessment was conducted for the project and is referenced in Section 4.13, *Noise*, 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 Community Noise Equivalent Level (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.

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 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 Kern County General Plan.
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, *Geology and Soils*, of this EIR, discusses potential geologic hazards, Section 4.10, *Hydrology and Water Quality*, of this EIR, discusses potential flood hazards, and Section 4.18, *Wildfire*, of this EIR discusses potential fire hazards as a result of project implementation. Consistent with 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 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 with implementation of Mitigation Measure MM 4.7-1	As described in Section 4.7, *Geology and Soils*, Mitigation Measure MM 4.7-1 would ensure that the project shall not place habitable structures within 500 feet of mapped ground fractures unless a full investigation is completed by a licensed geotechnical professional. The 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	Consistent	See 1.3, *Physical and Environmental Constraints*, Measure D, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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.	Consistent	See 1.3, *Physical and Environmental Constraints*, Goal 1, of the Kern County General Plan, above.
4.5 Landslides, Subsidence, Seiche, and Liquefaction		
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.	Consistent with implementation of Mitigation Measure 4.7-3	As discussed in Section 4.7, *Geology and Soils*, of this EIR, the project would implement Mitigation Measure MM 4.7-3, which would require the project to submit grading plans accompanied by a soils engineering report, engineering geology report, and drainage calculations 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 Mitigation Measure MM 4.7-3 would require a design-level geotechnical report that would provide specific requirements necessary for design of the structures in relation to seismic-related ground failure, including liquefaction. Therefore, with implementation of this mitigation measures, the project would be consistent with this goal to minimize the alternation of natural drainage areas.
Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	Consistent with implementation of Mitigation Measure MM 4.10-1	As discussed in Section 4.7, *Geology and Soils*, 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 CBC would ensure that effects from seismic-related ground failure including liquefaction would be minimized. See Section 4.7, *Geology and Soils*, of this EIR. In addition, with regard to erosion, as discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project would implement Mitigation Measure MM 4.10-1, which requires the completion of a hydrologic study and final drainage plan for the project prior to the issuance of a grading permit. This would serve to reduce any impacts related to erosion, consistent with this policy.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
4.6 Wildland and Urban Fire		
Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.	Consistent with implementation of Mitigation Measures MM 4.14-1, through MM 4.14-3	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 4.14-1, which would require preparation and implementation of a fire safety plan to ensure the provision of appropriate access. Additionally, the project would implement Mitigation Measures MM 4.14-2 and MM 4.14-3, which would provide a Cumulative Impact Charge (CIC) and Supplemental Cumulative Impact Charge (SCIC) 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.
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 with 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*, and 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 4.15-1	Section 4.15, *Transportation*, of this EIR includes Mitigation Measure MM 4.15-1 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 Measures MM 4.14-1 through MM 4.14-3	Consistent with this measure, the 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. Additionally, the project would implement Mitigation Measures MM 4.14-2 and MM 4.14-3, which would require the project to compensate the county for any deficiencies in service resulting from project construction and operation.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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.
4.10 Abandoned Open Shafts and Wells		
Policy 1: The County should protect residents from the hazards of improperly abandoned mine shafts.	Consistent	The solar facilities are compatible with open space, wind energy, and other resource management land uses. The project site is not located within an area that has abandoned mine shafts. Furthermore, the project does not propose mining on the project site. The project would not result in hazards from improperly abandoned mine shafts.
Policy 2: The County should protect residents from the hazards associated with development in areas where wells have been drilled and abandoned for exploration and/or production of oil and natural gas.	Consistent with implementation of Mitigation Measure MM 4.9-2	See 4.10, *Abandoned Open Shafts and Wells*, Policy 1, above. Additionally, based on CalGEM, the project site is not located within a known active oil production field. The project does not propose habitable structures or full-time employment onsite. Furthermore, implementation of Mitigation Measure MM 4.9-2, which involves the preparation of a hazardous materials business plan, would be required to ensure that potentially discovered oil wells were plugged sufficiently to prevent any leakage of harmful gases prior to permit approval.
Measure B: Support the construction site review program of the Department of Oil, Gas and Geothermal Resources that ensures that wells are precisely located, properly plugged and abandoned, and tested for leakage prior to development of the area.	Consistent	See 4.10, *Abandoned Open Shafts and Wells*, Policy 2, 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	Consistent	See 1.10.5, *Threatened and Endangered Species*, Policy 28, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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.	Consistent	See 3.3, *Sensitive Noise Areas*, Goal 1, above.
5.4 Electricity Resources and Generation		
5.4.5 Solar Energy Development		
Goal 1: Encourage safe and orderly commercial solar development.	Consistent	Consistent with this goal, the project would develop solar PV facilities that would generate 300 MW of solar energy and 100 MW of battery energy storage, 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 project would develop solar PV facilities capable of generating 300 MW of solar energy and 100 MW of battery energy storage, and would offset an equivalent amount of fossil fuel-generated electrical power in the valley region of Kern County. Operation of the project would improve air quality within the County and assist the County in meeting attainment goals. See Section 4.3, *Air Quality*, 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 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 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. The project site was historically used for dry farming, grazing, and oil exploration. It is currently disturbed and used for grazing. Final review of the project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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 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 project's transmission lines would not pose significant environmental or public health and safety hazards. The project's gen-tie line was analyzed throughout this Draft EIR. One of the project's objectives is to design the project in an environmentally responsible manner to avoid and/or minimize potential impacts, consistent with existing Kern County land use plans.
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, *Aesthetics*, of this EIR.

4.12 Mineral Resources

4.12.1 Introduction

This section describes the existing mineral resources conditions of the project site and vicinity, identifies associated regulatory requirements, and evaluates potential impacts of the proposed Sandrini Solar Project (project). Information used in the preparation of this section is referenced from the California Department of Conservation California Geological Survey, California Geologic Energy Management Division (CalGEM), United States Geologic Survey, and Kern County publications and maps, as cited throughout this section.

4.12.2 Environmental Setting

Public policy is that the nonrenewable characteristic of mineral deposits necessitates the careful and efficient development of mineral resources to prevent the unnecessary waste of these deposits due to careless exploitation and uncontrolled urbanization. Management of these mineral resources protects not only future development of mineral deposit areas, but also limits the exploitation of mineral deposits so that adverse impacts caused by mineral extraction can be reduced or eliminated. This section discusses the existing conditions related to mineral resources within the project area, including the project site.

Regional Setting

Mineral and petroleum resources are basic to the County of Kern's (County) economy; the County produces 80% of the oil and 46% of the natural gas in California (more than any other county), and ranks seventh in the United States in oil producing counties. In addition, borax, cement, decorative stone, bentonite, gypsum, pumice, and construction aggregates constitute major economic mineral resources. The Surface Mining and Reclamation Act of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to its known or inferred mineral potential. The State Geologist has classified 2,971 square miles of land in Kern County as MRZs of varying significance. Mineral resources in Kern County include numerous mining operations that extract a variety of materials, including sand and gravel, stone, gold, dimensional stone, limestone, clay, shale, gypsum, pumice, decorative rock, silica, and specialty sand. Significant mineral resources located in eastern Kern County include Portland Cement Concrete-Grade Aggregate, antimony, silver, and gold. The MRZ categories are defined as follows (CGS 1999a):

- **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 4.12-1, *Classified Mineral Resources within Kern County*, shows 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 1999b.

Petroleum Resources

The valley floor area of Kern County and the surrounding lower elevations of the mountain ranges contain numerous deposits of oil and gas resources within a 2.5-million-acre valley portion of Kern County. The central project sites (Sites 1–3, and 5) are located directly adjacent to and north of the Rio Viejo Oil Field, which includes many active, idle, and plugged oil and gas wells. The closest active oil and gas well within the Rio Viejo Oil Field is located approximately 800 feet from the southern boundary of Site 3. The project site is not located within a known oil production field, nor does the site have any known previous or active oil and gas wells (CalGEM 2021a). Additionally, the project site is not located within a designated mineral or petroleum resource site as identified within the Kern County General Plan (County of Kern 2009). The nearest land with this General Plan designation is approximately 0.5 miles southeast of Site 3, as indicated in Figure 3-10, *Mineral Resource Zones*, in Chapter 3, *Project Description*. The project site is also not within the General Plan Mineral and Petroleum designation or within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts.

Sand and Gravel

As discussed in the Land Use, Open Space, and Conservation Element of the Kern County General Plan, construction aggregates are a major economic mineral resource for the County. 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 140 miles north/northeast 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

As discussed in the Land Use, Open Space, and Conservation Element of the Kern County General Plan, borax constitutes a major economic mineral resource for Kern County in eastern Kern County. 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. The discovery of borates 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 (County of Kern 2009). Annually more than 1.8 million tons are removed from this mine, which supplies about 40% of the world's supply of borates. There are several other sources of borate minerals in Kern County (CGS 1999b).

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. 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 1999b).

Dimension Stone

Dimension stone is natural rock materials quarried for the purpose of obtaining blocks or slabs that meet specifications of 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 that have been used as dimension stone, field stone, rubble, and flagstone. Most

of the dimension stone (marble and flagstone) was mined until 1904; field stone and flagstone have been mined mostly since about 1952 in the area around Randsburg (CGS 1999b).

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 County in the 1860s, with the two largest mines being established in the 1890s. The Yellow Aster and Golden Queen mines, located in eastern Kern County, 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 byproduct of the gold ore (CGS 1999b). In production since 2016, the Golden Queen Mine has produced more than 12,255 ounces of gold and 100,408 ounces of silver (The Bakersfield Californian 2019). The mine is located in eastern Kern County outside the community of Mojave.

Local Setting

The project site is located in the southeastern portion of unincorporated Kern County, approximately 10 miles south of the City of Bakersfield near the unincorporated communities of Mettler, Kern Lake, and Lakeview. The project site is nestled between hilly and mountainous terrain to the south and to the east, and is largely developed with agricultural land that is fallow or actively planted with annual row crops. A number of mineral rights holders to oil and gas rights have been identified on the project site, including holdings of the Bureau of Land Management and California Resource Company (County of Kern 2021). The overall project site is not designated as a mineral recovery area by the Kern County General Plan (County of Kern 2009); however, much of Sites 1–3 and 5 are identified as an MRZ by the Department of Conservation's State Mining and Geology Board (see Figure 3-10 in Chapter 3, *Project Description*). These lands are designated as MRZ-1 by the State Mining and Geology Board, which indicates there is little likelihood for the presence of significant mineral resources. As discussed in Chapter 3, *Project Description*, Sites 1–3 would be developed with solar arrays and supporting infrastructure; Site 5 would not be developed.

The Rio Viejo Oil Field is directly adjacent to the southern project boundary, and several oil and gas wells are located with the project vicinity; however, no active oil, gas, or geothermal wells are located on the project site (CalGEM 2021a).

The nearest mine to the project site is the San Emidio Quarry Mine, which actively mines sand and gravel (USGS 2021), is located approximately 5 miles southwest of Sites 1 through 3. Table 4.12-2, *Mines within the Project Vicinity*, lists the mines located within a 20-mile radius of the project site, their status, and the commodity being mined.

TABLE 4.12-2: MINES WITHIN THE PROJECT VICINITY

Mine Title	Status	Commodity	Approximate Distance from Project Site
San Emidio	Active	Sand and Gravel	5 miles southwest
Wheeler Ridge	Active	Sand and Gravel	8 miles southeast

TABLE 4.12-2: MINES WITHIN THE PROJECT VICINITY

Mine Title	Status	Commodity	Approximate Distance from Project Site
Edmonston	Active	Sand and Gravel	18 miles southeast
Arvin	Active	Sand and Gravel	20 miles northeast
Maricopa	Active	Fullers Earth	20 miles west

SOURCE: USGS 2021.

4.12.3 Regulatory Setting

Federal

A number of mineral rights are held by the Bureau of Land Management, with the surface of the land remaining as private property. Drilling for oil and gas would require a permit from both the County and the Bureau of Land Management, in consultation with CalGEM.

State

California Geologic Energy Management Division

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 (CalGEM 2021b). A permit from Kern County Planning and Natural Resources is required for all oil and gas activities first before CalGEM can issue any permit under Chapter 19.98 of the Kern County Zoning Ordinance. Such activities in the A (Exclusive Agriculture) zoning district are ministerial with conformance to all requirements of Chapter 19.98.

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 requires the State Geologist to classify land into MRZs according to its known or inferred mineral potential. The primary products are mineral land classification maps and reports. Local agencies are required to use the classification information when developing land use plans and when making land use decisions (CalGEM 2021b). MRZs are defined in detail under the subheading *Regional Setting*.

Local

Kern County Zoning Ordinance

Extraction of minerals would require conformance with the Kern County Zoning Ordinance Chapter 19.100, Surface Mining Operations. Oil and gas exploration and extraction requires an Oil and Gas

Conformity Review Permit or Minor Activity Review permit for all activities under Chapter 19.98 of the Zoning Ordinance. These permits are required before any permits are issued by the state, making the County the lead agency for the California Environmental Quality Act (CEQA).

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 (County of Kern 2009). 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 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.

Implementation 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.

4.12.4 Impacts and Mitigation Measures

Methodology

The potential impacts to mineral resources have been evaluated using a variety of sources, including a review of information from the California Department of Conservation California Geological Survey, United States Geological Survey, and Kern County publications and maps. Using the aforementioned resources and professional judgment, impacts were analyzed according to the CEQA significance criteria described below.

Thresholds of Significance

The following criteria, as established in CEQA Guidelines Appendix G, were used to determine if the project could potentially have a significant adverse effect on mineral resources.

A project would 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 residents of the state.

No land located within the project site is within a designated mineral recovery area per the Kern County General Plan. The project site generally has agricultural land use designations: Map Code 8.1 (Intensive Agriculture), Map Code 8.1/2.3 (Intensive Agriculture/Shallow Groundwater), and Map Code 8.1/2.5 (Intensive Agriculture/Flood Hazard). As shown in Figure 3-6, *Existing Zoning*, in Chapter 3, the project site is zoned A (Exclusive Agriculture). The project site is not located within NR (Natural Resource) or PE (Petroleum Extraction) zone districts (County of Kern 2009).

The majority of the project site is located on lands classified as MRZ-1 by the California Geological Survey, as illustrated in Figure 3-10 in Chapter 3. This designation indicates that there is little likelihood for the presence of significant mineral resources (DOC 2021). The nearest active mine, San Ernidio Quarry, is more than 5 miles southwest of the project boundary. The proposed project would not prevent continued operation of this gravel and sand mine or other mines in the project vicinity.

The nearest oil extraction area is the Rio Viejo Oil Field. The field, which is approximately 800 feet south of the project site, contains several active, idle, canceled, and plugged wells. The project site is not part of the Rio Viejo Oil Field (CalGEM 2021a). There are no previous or active oil wells on the project site.

A number of mineral rights holders to oil and gas rights have been identified on the project site, including holdings of the Bureau of Land Management and California Resource Company. The surface rights to access have not been waived, and therefore they are “co-owners” of the surface. The mineral rights holders have the absolute right to access their minerals on those properties zoned A (Exclusive Agriculture) with a

ministerial permit from the Planning and Natural resources Department, and then a permit from CalGEM. All CEQA compliance has been completed with the Kern County Final EIR (2020/2021) for the 2021 Oil and Gas Ordinance. The mineral rights holders do not need the surface owners' permission to obtain a permit, although a longer 120-day process and extensive mitigation measures to protect the surface owners may apply.

Figure 4.12-1, *Mineral Ownership*, shows the areas affected by mineral right holders.

Installation of solar panels and supporting infrastructure could impede access to oil resources or imped potential related operations in adjacent areas. Further County policy is to protect the rights of oil and gas operators to access their minerals. Mitigation Measure (MM) 4.12-1 requires that the applicant enter into discussion with mineral owners who can be located and create drilling areas in appropriate locations and distances to provide for the economically feasible extraction and exploration of oil and gas. Therefore, with implementation of MM 4.12-1, the potential loss of oil and gas opportunities resulting from impacts to mineral resources would be less than significant.

Mitigation Measures

MM 4.12-1 Prior to issuance of any grading or building permit, excluding the generation tie line in the conservation area, the applicant shall provide the following documentation regarding the mineral rights holders who also have right of surface access and drilling areas:

a. Written authorization, in a separate document outside any agreement, from the mineral right holder that they agree to solar panels being placed on the specific parcel with the mineral rights. The letter shall include the specific Assessor's Parcel Number of the property and name of the mineral rights holders, and any agreements for size and location of drilling areas.

b. 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.

c. 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 after Mitigation

Impacts would be 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.

The project site is not located on locally important mineral resource recovery lands as designated by the Kern County General Plan, but is in an area of potential oil and gas exploration and extraction. The

installation of photovoltaic panels, battery energy storage area, collector substations, gen-tie lines, and other project infrastructure could preclude potential on-site mineral resource development for oil and gas. MM 4.12-1 would ensure that mineral rights holders for oil and gas exploration and extraction have access to the minerals after during and after implementation of the project. With implementation of MM 4.12-1, the potential loss of mineral resources for oil and gas would be less than significant.

Mitigation Measures

Implement MM 4.12-1.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

There are 36 cumulative projects within a 6-mile radius of the project site, as shown in Table 3-4, *Cumulative Projects List*, in Chapter 3, *Project Description*. The geographic scope of impacts associated with mineral resources generally encompasses the project site and a 0.25-mile radius around the project site. As shown in Figure 3-12, *Cumulative Projects*, in Chapter 3, only one cumulative project is within a 1-mile radius of the project site. This scope is appropriate because of the localized nature of mineral resource impacts. The closest cumulative project located within 0.25 miles of the project site is Swanson Engineering Inc., which is located immediately adjacent to Sites 2 and 3, and similarly located approximately 800 feet north of the Rio Viejo Oil Field. However, development of the project would not interfere with this expansion nor prevent any other current or future mining projects. The project site is located in an area with little likelihood for the presence of significant mineral resources (MRZ-1). Although there are mineral rights on the project site, the project itself would not prevent continued or future operation of the mining and petroleum extraction sites with the provision of drilling areas as required by MM 4.12-1. Therefore, the proposed project, combined 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. 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 would be less than significant.

Mitigation Measures

Implement MM 4.12-1.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

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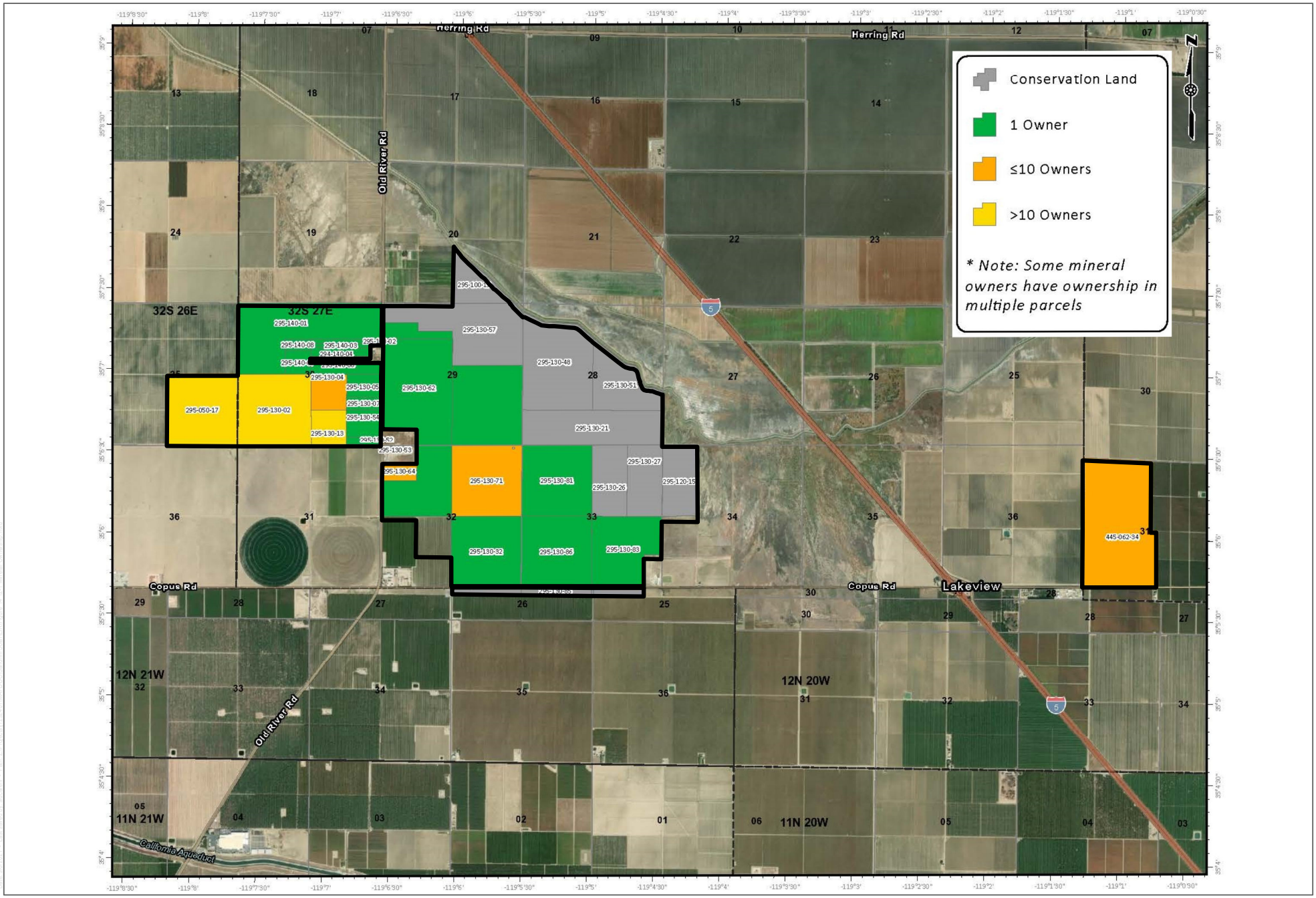

SOURCE: EDP Renewables 2021

DUDEK

0 2,450 4,900 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 4.12-1
Mineral Ownership
Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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4.13 Noise

4.13.1 Introduction

This section describes the existing noise and vibration conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Sandrini Solar Project (project). The information and analysis in this section is largely based on the Environmental Noise Assessment Sandrini Solar Park Kern County, California prepared by WJVA (May 2021) located in Appendix H of this EIR.

Noise Fundamentals

An understanding of the physical characteristics of noise is useful for evaluating environmental noise impacts. 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)
- Physical effects (hearing loss)

Although exposure to high noise levels has been demonstrated to cause physical and physiological 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 atonal pitch of 100Hz. 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 micro pascals (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 (e.g., absorption, reflection).

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 soundwaves 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 (threshold of feeling), progressing to pain at still higher levels (140 dBA, threshold of pain). 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 dBA = 63 dBA; 80 dBA + 80 dBA = 83 dBA).

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%, 50%, and 90% 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.). L_{dn} is used by nearly all federal, state, and local agencies 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 dBA value of L_{dn} or CNEL 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. For convenience, a summary of common noise metrics is provided in Table 4.13-1, *Common Noise Metrics*.

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 p.m. to 10 p.m.) and a 10 dBA penalty for sleeping hours (10 p.m. to 7 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 p.m. and 7 a.m.
L_{eq}	Equivalent Continuous 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_{eq} equates to L_{eq} (1) for L_{eq} averaged over one hour; e.g., L_{eq} (8) equates averaged over eight hours.
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.

Sound levels can also be attenuated by human-made or natural barriers. Solid walls, berms, or elevation differences typically reduce noise levels in the range of approximately 5 to 15 dBA (Caltrans 2020). Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The outside-to-inside noise attenuation provided by typical structures in California ranges between 17 to 30 dBA with open and closed windows, respectively, as shown in Table 4.13-2, *Outside-to-Inside Noise Attenuation (dBA)*.

TABLE 4.13-2: OUTSIDE-TO-INSIDE NOISE ATTENUATION (DBA)

Building Type	Open Windows	Closed Windows
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/offices/hotels	17	25
Theaters	17	25

TABLE 4.13-2: OUTSIDE-TO-INSIDE NOISE ATTENUATION (DBA)

Building Type	Open Windows	Closed Windows
SOURCE:	Transportation Research Board, National Research Council 1971.	
NOTES:	dBA = A-weighted decibel. As shown, structures with closed windows can attenuate exterior noise by a minimum of 25 to 30 dBA	

Fundamentals of Vibration

As described in the Caltrans Transportation and Construction Vibration Guidance Manual (Caltrans 2020), groundborne vibration can be a serious concern for nearby neighbors of a transit system route or major construction site, 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) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. 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. Peak particle velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (Caltrans 2020). 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), 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. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. According to Caltrans (Caltrans 2020), the structural damage threshold, at which there is a risk to normal structures from continuous or frequent vibration sources, is 0.3 inches per second (in/sec) PPV for older residential structures and 0.5 in/sec PPV for newer building construction. With regard to human perception, vibration levels would begin to become distinctly perceptible at levels of 0.04 in/sec PPV for continuous or frequent vibration sources. Continuous vibration levels are considered annoying for people in buildings beginning at levels of 0.2 in/sec PPV (Caltrans 2020).

4.13.2 Environmental Setting

Project Location

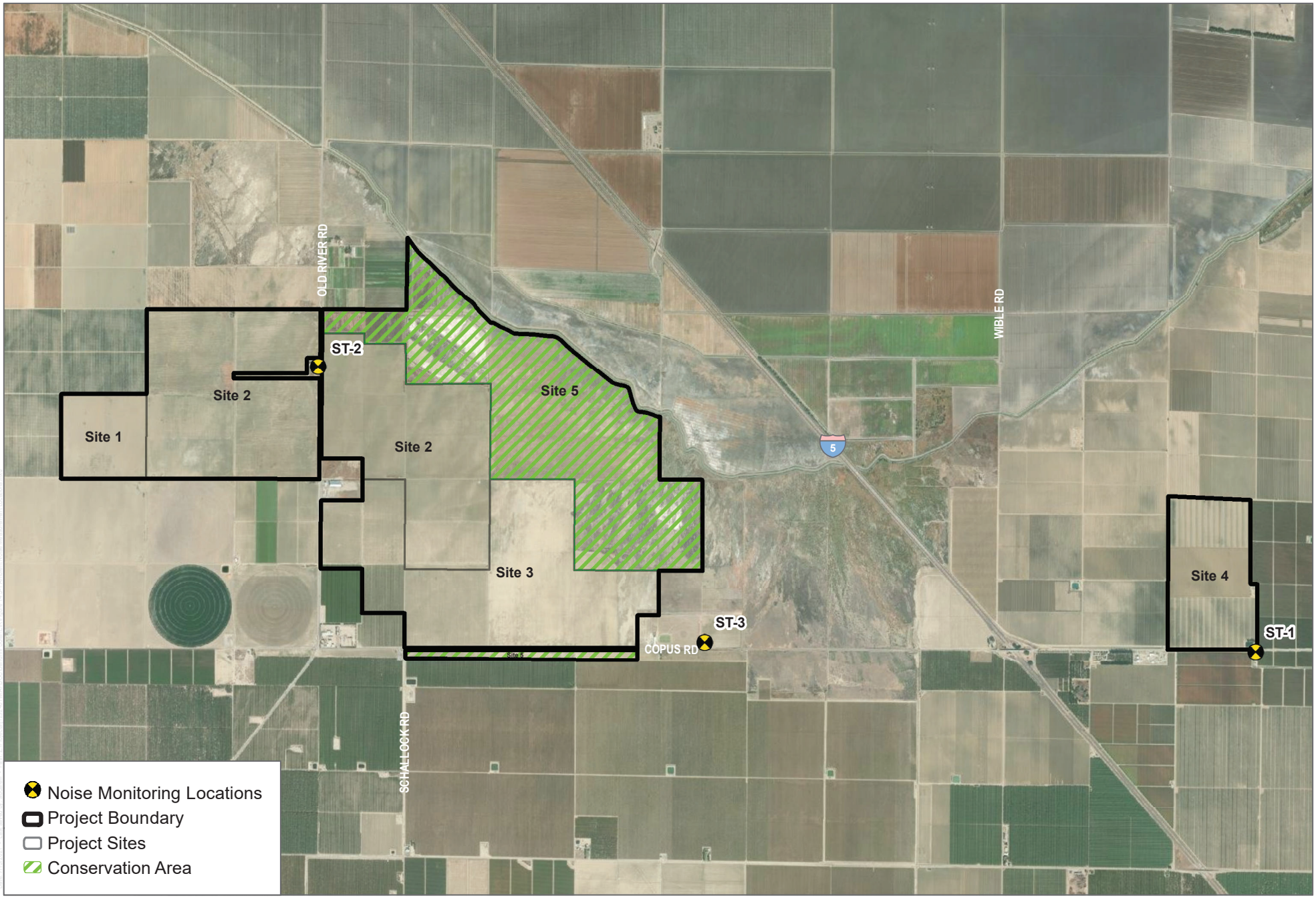
The project is located near the unincorporated communities of Mettler, Kern Lake, and Lakeview and is nestled between hilly and mountainous terrain to the south and to the east. The project site consists of approximately 3,469.87 acres spread across 33 parcels in the overall project vicinity. The project is located in a rural, agricultural area, with scattered rural residences, as well as agricultural operations and businesses. Refer to Figure 3-1, *Site Vicinity*, in Chapter 3 for an illustration of the local vicinity surrounding the project site.

Existing Acoustical Environment

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 observed during the ambient noise measurements included noise associated with birds; high- altitude aircraft overflights; heating, ventilation, and air conditioning (HVAC) systems; and barking dogs.

Measurements of existing ambient noise levels in the project vicinity were conducted on November 11, 2020. Short-term (15-minute) ambient noise measurements were conducted at three locations (Sites ST-1, ST-2, and ST-3). The locations of the three ambient noise measurement locations were selected as they are in the vicinity of three existing residential land uses that are near or adjacent to the project site. These three noise measurement sites represent the three noise-sensitive receptors (residential land uses) in the general vicinity of the project site. There are additional noise-sensitive receptors located in the vicinity of the potential generation tie-line (gen-tie) route along Valpredo Avenue. Table 4.13-3, *Summary of Short-Term Noise Measurement Data*, summarizes the short-term ambient noise measurement results. The locations of the ambient noise monitoring sites are shown in Figure 4.13-1, *Ambient Noise Measurement Locations/Sensitive Receptors*.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped ½-inch microphones. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.



SOURCE: Maxar 2020; WJV Acoustics 2020

DUDEK

0 2,000 4,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 4.13-1

Ambient Noise Measurement Locations / Sensitive Receptors

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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Table 4.13-3 summarizes short-term noise measurement results. The noise measurement data included energy average (L_{eq}) maximum (L_{max}) as well as five individual statistical parameters. Observations were made of the dominant noise sources affecting the measurements. The statistical parameters describe the percent of time a noise level was exceeded during the measurement period. For instance, the L_{90} describes the noise level exceeded 90% of the time during the measurement period, and is generally considered to represent the ambient (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources.

TABLE 4.13-3: SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA

Site	Time	A-Weighted Decibels, dBA							Sources
		L_{eq}	L_{max}	L_2	L_8	L_{25}	L_{50}	L_{90}	
ST1	8:45 a.m.	68.3	83.8	79.0	72.8	63.6	53.9	49.5	TR, AG
ST2	9:15 a.m.	70.1	85.5	81.0	74.9	67.0	55.6	43.0	TR, AC
ST3	9:40 a.m.	67.4	81.5	79.5	71.9	64.7	53.5	44.5	TR,D, B

TR: Traffic AC: Aircraft D: Dogs Barking B: Birds AG: Agricultural Activities
SOURCE: WJV Acoustics, Inc.

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. Noise sensitive receptors in proximity to the project site include residences. Short-term noise measurements were conducted to characterize existing ambient noise levels in the vicinity of the closest residences to the site (see Figure 4.13-1).

There are three sensitive receptors (single-family residences) located in proximity to the project. The first receptor is a residential home located immediately adjacent to Site 4, south of Copus Road. The second receptor is a residential home located immediately adjacent to Site 2, located west of Old River Road. The third receptor is a residential home located north of Copus Road, approximately 0.40 miles east of Site 3. See Figure 3-3, *Aerial Photograph*, in Chapter 3 for receptor locations.

Airports

The project site is not located within an area covered by the Kern County Airport Land Use Compatibility Plan. The nearest public airport to the project site is the Taft-Kern County Airport, located approximately 17 miles northwest of the project site. The closest private airport facility to the project site is Creekside Airport, located approximately 7 miles northeast of the project site.

4.13.3 Regulatory Setting

Federal

Noise Control Act of 1972 (42 USC 4910)

This act establishes a national policy to promote an environment for all Americans to be free from noise that jeopardizes their health and welfare. To accomplish this, 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 information to the public with respect to the noise-emission and noise-reduction characteristics of such products.

United States Environmental Protection Agency, Environmental Noise Levels

The United States Environmental Protection Agency (EPA) 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. This document does not constitute EPA regulations or standards but identifies safe levels of environmental noise exposure without consideration of costs for achieving these levels or other potentially relevant considerations.

Federal Energy Regulatory Commission Guidelines, Noise Guidelines

Federal Energy Regulatory Commission's *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 EPA-identified level of significance of 55 L_{dn} dBA.

Department of Housing and Urban Development Environmental Standards

The Department of Housing and Urban Development regulations (24 CFR Part 51) set forth the following exterior noise standards for new home construction assisted or supported by the Department:

- 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

The Department of Housing and Urban Development's regulations do not contain standards for interior noise levels. Rather, a goal of 45 dBA is set forth, and attenuation requirements are geared to achieve that goal.

Occupational Safety and Health Administration Occupational Noise Exposure

The Occupational Safety and Health Administration's *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. 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 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 (Figure 4.13-2, *California Noise/Land Use Criteria*).

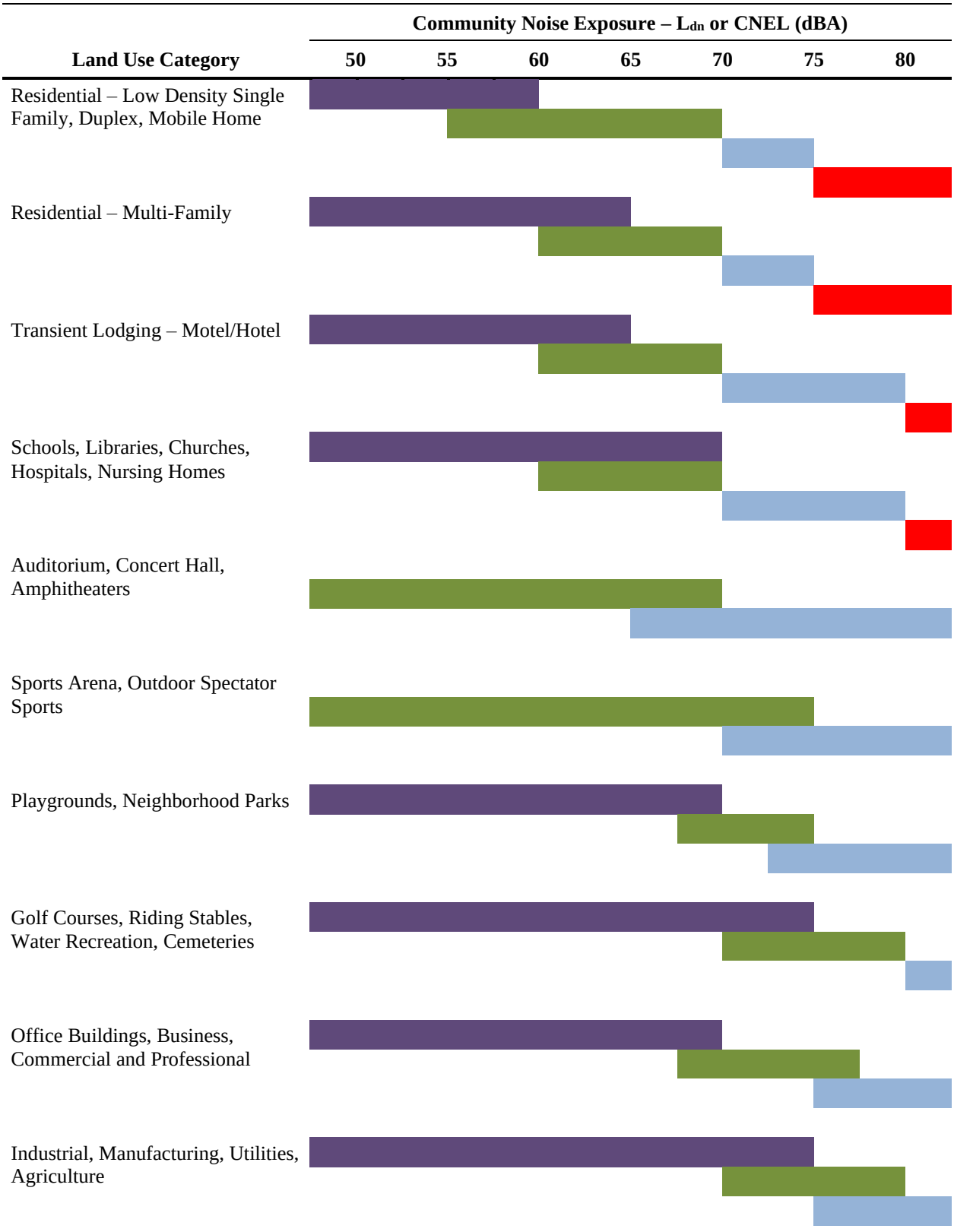
The state requires all municipalities to prepare and adopt a comprehensive long-range general plan. General plans must contain a noise element (California Government Code Section 65302(f) and Section 46050.1 of the Health Safety Code). The requirements for the noise element of the general plan include 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 that serve as enforcement mechanisms for controlling noise. Persons in low-density residential settings are most sensitive to noise intrusion, with noise levels of 60 dBA CNEL and below are considered "acceptable." For land uses such as schools, libraries, churches, hospitals, and parks, acceptable noise levels go 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 Appendix G to the CEQA Guidelines (CCR Title 14, Appendix G) lists some indicators of potentially significant impacts, which are included below under the heading "Thresholds of Significance."

The state has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL or L_{dn} in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL or L_{dn}. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

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.

FIGURE 4.13-2: CALIFORNIA NOISE/LAND USE CRITERIA



Land Use Category	Community Noise Exposure – L_{dn} or CNEL (dBA)						
	50	55	60	65	70	75	80
	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 2003.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and local regulations, 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 noise. The policies, goals, and implementation measures in the Kern County General Plan related to noise 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.

Kern County General Plan

The noise element of a general plan is a mandatory element as required by California Government Code Section 65302(f). The State requires that local jurisdictions prepare statements of policy indicating their intentions regarding noise and noise sources, establish desired maximum noise levels according to land use categories, set standards for noise emission from transportation and fixed-point sources, and prepare implementation measures to control noise. The Noise Element of the Kern County General Plan identifies noise-sensitive land uses and noise sources, defines areas of noise impact, and establishes goals, policies, and programs to ensure that County residents are protected from excessive noise, and to develop an implementation program which could effectively mitigate potential noise problems. The implementation measures have been designed so that they will 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 of the Kern County General Plan, Policy 10, 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 Noise and Energy Elements of the County's General Plan, relevant to the proposed project, are summarized below (County of Kern 2009).

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 Ldn and interior noise levels in excess of 45 dB Ldn.

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 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 Zoning Ordinance

Section 19.80.030.S(1) of the Kern County Zoning Ordinance restricts noise generated by commercial or industrial uses within 500 feet of a residential use or residential zone district. The commercial or industrial use shall not generate noise that exceeds an average 65 dB L_{dn} between the hours of 7:00 a.m. and 10:00 p.m. and shall not generate noise that exceeds 65 dB, or which would result in an increase of 5 dB or more from ambient sound levels, whichever is greater, between the hours of 10:00 p.m. and 7:00 a.m. Commercial or industrial facilities that are located in the M-3 zone district are exempt from these noise-generation restrictions.

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.

Section 8.36.020 – Prohibited sounds

It is unlawful for any person to do, or cause to be done, any of the following acts within the unincorporated areas of the county:

H. To create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the

construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:

1. The resource management director or a 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 in the Caltrans *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). Caltrans' threshold criteria pertaining to building damage and human annoyance for continuous and transient events are summarized in Table 4.13-4, *Vibration Criteria for Structural Damage*, and Table 4.13-5, *Vibration Criteria for Human Annoyance*, respectively below.

TABLE 4.13-4: VIBRATION CRITERIA FOR STRUCTURAL DAMAGE

	Vibration Level (in/sec PPV)	
Structure and Condition	**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 select 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.

As indicated in Table 4.13-4, the threshold at which there is a risk to normal structures from continuous events is 0.3 in/sec PPV for older residential structures and 0.5 in/sec PPV for newer building construction. A threshold of 0.5 in/sec PPV also represents the structural damage threshold applied to older structures for transient vibration sources.

TABLE 4.13-5: VIBRATION CRITERIA FOR HUMAN ANNOYANCE

	Vibration Level (in/sec PPV)	
Human Response	**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

TABLE 4.13-5: VIBRATION CRITERIA FOR HUMAN ANNOYANCE

Human Response	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
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.

As shown in Table 4.13-5, with regard to human perception, vibration levels would begin to become distinctly perceptible at levels of 0.04 in/sec PPV for continuous events and 0.25 in/sec PPV for transient events. Continuous vibration levels are considered annoying for people in buildings at levels of 0.2 in/sec PPV or greater.

4.13.4 Impacts and Mitigation Measures

Methodology

Noise impacts associated with the proposed project were assessed in this section based primarily on the Environmental Noise Assessment Sandrini Solar Park Kern County, California, prepared by WJV Acoustics (May 2021) located in Appendix H of this EIR. To assess the potential for temporary construction and long-term operational noise and vibration impacts, sensitive receptors closest to the project site were identified. Potential significant impacts associated with the project were evaluated on a quantitative and qualitative basis through a review of published literature and other available information, and by using noise-industry standards and professional judgment in comparing the predicted noise and vibration levels from project construction and operation against existing conditions and adopted standards. The evaluation of proposed project impacts is based on significance criteria established by Appendix G of the CEQA Guidelines.

Short-Term Construction Noise

Construction noise was assessed using the general methodology prescribed in the U.S. Department of Transportation, Federal Transit Authority's *Transit Noise and Vibration Impact Assessment* (FTA 2006). Construction noise and vibration are temporary phenomena. Construction noise and vibration levels experienced by receptors in the vicinity of the construction site vary from hour-to-hour and day-to-day, depending on the equipment in use, the operations being performed, and the distance between the source and receptor. Noise exposure at any single point outside the project site would also vary depending on the proximity of construction activities to that point; with larger project sites, construction activities will tend to occur in a concentrated area, that moves around the site as construction of an element is completed. Therefore, even for a given off-site receptor, noise levels will vary across the duration of the entire construction effort.

With regard to construction activity in general, equipment operates in alternating cycles of full power and low power. This produces noise levels that are less than the maximum level that would occur if equipment

is run continuously at full power. The typical noise levels for various pieces of construction equipment at a distance of 50 feet are presented in Table 4.13-6, *Typical Construction Equipment Noise Levels and Use Factors*. For example, measured backhoe maximum sound levels are 78 dBA at a distance of 50 feet. The loudest piece of equipment included in the table, an impact pile driver, has a measured maximum sound level of 101 dBA at 50 feet. It is not anticipated that an impact pile driver would be used for construction of the project; the loudest anticipated construction equipment for the project would be a vibratory pile driver, with a maximum sound level of 95 dBA at 50 feet.

TABLE 4.13-6: TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS AND USE FACTORS

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Actual Measured L_{max} at 50 feet (dBA, slow) samples averaged
All Other Equipment > 5 HP	No	50	84
Auger Drill Rig	No	20	84
Backhoe	No	40	78
Bar Bender	No	20	78
Compressor (air)	No	40	78
Concrete Pump Truck	No	20	81
Crane	No	16	81
Dozer	No	40	82
Dump Truck	No	40	76
Excavator	No	40	81
Flat Bed Truck	No	40	74
Front End Loader	No	40	79
Generator	No	50	81
Generator (<25KVA, VMS signs)	No	50	73
Hydra Break Ram	Yes	10	90
Man Lift	No	20	75
Pickup Truck	No	40	75
Pile Driver (Impact)	Yes	20	101
Pile Driver (Vibratory)	Yes	20	95
Pneumatic Tools	No	50	85
Pumps	No	50	81
Roller	No	20	80
Sand Blasting (Single Nozzle)	No	20	96
Scraper	No	40	84
Tractor	No	40	83
Welder / Torch	No	40	74

SOURCE: FTA 2006

To convert the maximum noise level (L_{max}) to an average noise level (L_{eq}) occurring during construction for any piece of equipment in Table 4.13-6, the following formula may be used (FTA 2006):

$$L_{eq} = L_{max} + 10 \log (U.F.)$$

Where: L_{max}. is the maximum noise emission level reported in Table 4.13-6.

U.F. is the acoustical Use Factor reported in Table 4.13-6.

For example, a dozer with measured L_{max} of 82 dBA and a use factor of 40% would produce average noise (L_{eq}) of 78 dBA at 50 feet during construction. A vibratory pile driver with measured L_{max} of 95 dBA and a use factor of 20% would produce average noise (L_{eq}) of 88 dBA at 50 feet during construction. A generator with measured L_{max} of 81 dBA and a use factor of 50% would produce average noise (L_{eq}) of 78 dBA at 50 feet during construction.

Under general assessment guidelines for construction noise (FTA 2006), average noise levels from a given construction phase can be assessed based upon the two noisiest pieces of equipment likely to be used. A vibratory pile driver (L_{max} of 95 dBA at 50 feet), and a dozer (L_{max} of 85 dBA at 50 feet) are the two loudest pieces of equipment in Table 4.13-6 that are likely both to be used at any point during the project construction. As calculated previously, a vibratory pile driver has an L_{eq} of 88 dBA at 50 feet, while a dozer has an L_{eq} of 78 dBA at 50 feet. The combined noise level from this equipment would be 88 dBA L_{eq} at 50 feet (the addition of these two values is performed with a logarithmic equation; when two sound level values are 10 dBA or more apart, their sum is equal to the higher value). Using the outdoor attenuation rate for point noise sources of 6 dBA with each doubling of the distance from source to receiver, and the distance from the closest construction boundary to the adjacent residence, average noise levels at the closest residences were calculated.

There are two existing sensitive receptors (residential land uses) located within 500 feet of any potential construction activities. These residences are in the vicinity of ambient noise monitoring sites ST-1 and ST-2 (see Figure 4.13-1). The distances from the closest residences to the project site range from approximately 150–300 feet. Additionally, there are multiple (approximately 5–7) sensitive receptors located in the vicinity of a potential gen-tie line route located along Copus Road or Valpredo Avenue. At the time of this analysis the exact locations of gen-tie routes were not known, but it may be assumed that the residences located along these roadways would be located at a distance as close as 100 feet from the gen-tie routes, and could be subjected to construction noise associated with gen-tie line construction activities; as one example, ST-3 is located adjacent to a representative residence along a potential gen-tie route (see Figure 14.3-1). Table 4.13-7, *Average Construction Noise Levels at Identified Distances to Residences* provides the average construction noise levels at the distances to vicinity residences identified in the above discussion. These average noise levels would represent construction activity occurring immediately adjacent to the construction zone boundary, construction located internal to the site (and farther from the boundary) would generate lower noise levels at the adjacent residences.

TABLE 4.13-7: AVERAGE CONSTRUCTION NOISE LEVELS AT IDENTIFIED DISTANCES TO RESIDENCES

Distance	Construction Noise (L_{eq} dBA)
100 Feet	82
150 Feet	78
300 Feet	72

Construction Traffic Noise

Construction would also generate offsite noise from vehicle traffic. Noise from daily construction worker commute trips and truck trips would affect surrounding traffic noise levels along roadways used to access

the project site. A doubling of a noise source (e.g., vehicle traffic) is required to result in a perceptible (3 dB or greater) increase in the resulting traffic noise level. Offsite construction noise levels are assessed based on the potential to result in a perceptible change in traffic-related noise levels.

Decommissioning Noise

Following the project's useful life, the project proponent may choose to update the site technology and re-commission, or decommission and remove the systems and their components. If decommissioning occurs, activities associated with decommissioning would be similar or less than the noise levels experienced under the worst case construction activities. Therefore, impacts from decommissioning are anticipated to be identical to or less than those occurring during construction.

Construction Groundborne Vibration

Construction vibration was assessed using the general methodology prescribed in the Caltrans *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). The vibration generation levels for the most common construction equipment are presented in Table 4.13-8, *Vibration Levels Generated by Construction Equipment*.

TABLE 4.13-8: VIBRATION LEVELS GENERATED BY CONSTRUCTION EQUIPMENT

Equipment	Reference PPV at 25 feet (in/sec)
Vibratory Roller	0.210
Large bulldozer	0.089
Caisson Drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003
Vibratory pile driver	0.65

SOURCE: Caltrans 2020

To calculate the vibration level for any piece of equipment in Table 4.13-8 at a receiver distance greater than 25 feet from the equipment, the following formula may be used (Caltrans 2020):

$$\text{PPV at Distance D} = PPV_{Ref} (25/D)^{n} \text{ (in/sec)}$$

Where: PPV_{ref} is the value listed for the individual equipment in Table 4.13-8.

D = distance from pile driver to the receiver in feet.

n = 1.1 (the recommended value for attenuation rate through ground)

For example, a large dozer with PPV_{ref} of 0.089 in/sec at 25 feet would generate a vibration level of 0.011 feet at a distance of 100 feet.

There are two existing sensitive receptors (residential land uses) located within 500 feet of any potential construction activities. The distances from the closest residences to the project site range from approximately 150-300 feet. Additionally, there are multiple (approximately 5–7) sensitive receptors

located in the vicinity of a potential gen-tie route located along Copus Road or Valpredo Avenue at an anticipated distance as close as 100 feet from the gen-tie routes. Table 4.13-9, *Construction Vibration Levels at Typical Distances to Residential Receivers*, provides the construction equipment vibration levels at the distances to vicinity residences identified in the above discussion.

TABLE 4.13-9: CONSTRUCTION VIBRATION LEVELS AT TYPICAL DISTANCES TO RESIDENTIAL RECEIVERS

	PPV (in/sec)	
Equipment	**@ 100 feet**	**@ 300 feet**
Bulldozer (Large)	0.011	0.006
Bulldozer (Small)	0.0004	0.00019
Loaded Truck	0.01	0.005
Jackhammer	0.005	0.002
Vibratory Roller	.03	0.013
Caisson Drilling	.01	0.006
Vibratory Pile Driver	0.14	0.042

SOURCE: Caltrans 2020

With regard to the vibration levels reported in Table 4.13-9, construction vibration would be a temporary phenomenon; vibration levels experienced by receptors in the vicinity of the construction site would vary from hour-to-hour and day-to-day, depending on the equipment in use, the operations being performed, and the distance between the source and receptor. Vibration exposure at any single point outside the project site would also vary depending on the proximity of construction activities to that point; with larger project sites, construction activities will tend to occur in a concentrated area, that moves around the site as construction of an element is completed. Therefore, even for a given off-site receptor, vibration levels will vary across the duration of the entire construction effort.

Long-Term Operational Noise

Stationary Sources

Long-term operational project noise was assessed based upon the detailed site layout plans indicating locations for each of the major noise-generating components, identified sound level for each piece of equipment, and the location of the closest noise-sensitive receivers (i.e., residences) to the project site. Typical noise-producing equipment associated with the proposed project includes PV and battery energy storage system (BESS) inverters and associated AC/chiller units, PV trackers and substation with step-up transformers. The exact equipment types, models, locations and associated noise levels were not available for all potential project noise sources at the time this analysis was conducted; however, where project-specific information was not available, WJVA identified an appropriate representative sound level reference for each type of major equipment to be used at the facility. A description of major project equipment and the employed sound level reference for each are provided below. Refer to Appendix H for the detailed site layouts indicating the location of the project components described below.

PV Inverters

WJVA identified that noise levels associated with inverters typically range from approximately 51 to 70 dBA at a distance of 10 feet from the source. For the purpose of the operational noise analysis, a reference noise level associated with Freemaq Multi PCSM PV inverter was employed, as they represent the highest noise levels of the reviewed data. The Freemaq Multi PCSM PV inverter has a manufacturer rating of 79 dBA at a distance of 1 meter from the source (3.3 feet). The manufacturer-supplied noise level data is included in Appendix H.

Substation Transformers

According to the project site plan, there would be up to two substation locations. Substations typically include step-up transformers. WJVA reviewed noise level data associated with various capacity transformers previously analyzed for other projects. Based upon this review, WJVA identified that noise levels associated with sub-station transformers that are expected to be employed at the project typically range from approximately 70 to 75 dB at a distance of 3 feet from the source. A reference sound level of 75 dBA at 3 feet from the source is used in this analysis to represent substation transformers.

Battery Energy Storage System

According to the project site plan, there would be two BESS locations. The exact type and configuration of the BESS operations were not known at the time this analysis was prepared; however, the applicant has stated there would be approximately 16 BESS inverters.

WJVA reviewed noise level data from a recent similar project, to estimate noise levels associated with the BESS components. Each BESS inverter skid typically incorporates chiller units. For the purpose of this analysis, it was assumed that each of the 16 BESS inverters would incorporate 28 chiller units, per skid (assumption based upon an analysis prepared by WJVA for a similar comparable project). For the purpose of this analysis, it was assumed the 16 BESS inverters would be split between the two designated BESS areas (i.e., 8 BSS inverters per BSS area) (see Appendix H).

Each BESS skid containing one BESS inverter (with sound level of 79 dBA at 1 meter) and 28 chiller units (each with a sound level of 71 dBA at 1 meter) would result in a total combined noise level of approximately 87 dBA at a distance of 1 meter. The inverter units would be evenly dispersed throughout the designated BESS area. WJVA reviewed a typical BESS general layout provided, which indicates that BESS inverter spacing would be expected to be approximately 30 feet offset from each other, within the overall BESS areas. At a distance of 30 feet, the noise associated with each BESS skid would be approximately 68 dB. When 68 dBA is added to 87 dBA, the resulting combined noise level remains 87 dBA. Therefore, as a result of overall equipment spacing within the BESS areas, noise levels associated with combined BESS units would not be expected to exceed that of one individual unit at any location. Therefore, the noise levels associated with BESS areas would not exceed 87 dB at a distance of 1 meter at any location.

Trackers

The project's photovoltaic (PV) panels would utilize axis trackers to periodically adjust the angle of the PV panels in relation to the sun. This would occur intermittently throughout the daytime hours. Noise levels associated with trackers are very low in nature, approximately 37 dB at a distance of 10 feet from the source (AECOM 2012). Such noise levels are essentially negligible and inaudible beyond a few feet from the

source. Noise contributions from the trackers were therefore not combined with the noise contributions from the major equipment in the noise analysis.

Electrical Transmission Lines (Gen-Tie Lines)

The project would include overhead electrical transmission lines, generally referred to as gen-tie lines. The exact gen-tie line routes are not known at this time, and a few options are being considered. Gen-tie lines are used to facilitate the transmission of generated electricity to off-site stations. Noise associated with gen-tie lines are considered negligible and are generally limited to noise associated with corona discharge. The noise is often described as a crackling or humming sound, and associated noise levels could be expected to be approximately 25 dBA at a distance of 25 feet from the source. Such noise levels are negligible and inaudible beyond a few feet from the source, and this noise contribution was therefore not combined with other sources in the analysis. Figure 3-4 of Chapter 3, *Project Description*, provides the possible gen-tie line routes.

Operations Noise Calculations

The provided site plan and noise specifications for the noise-generating equipment anticipated to be used were utilized to calculate the operational noise from the proposed project. The resulting project operational noise levels at the closest off-site receivers were calculated based upon the published sound level for each piece of equipment; standard outdoor distance attenuation rates for point sources and soft-site conditions applied to the distance between each equipment location and the modeled receiver locations; and, the logarithmic sum of individual equipment noise levels at the receivers.

Sound attenuation due to distance, for a point source (which is applicable to piece of equipment) is calculated with the equation:

$$SPL_1 = SPL_2 - 20\log(D_2/D_1)$$

Where: SPL_1 is the calculated sound pressure level (in dB) at specified distance [D_2]

SPL_2 is a known (measured) sound pressure level at a known distance [D_1]

D_1 is distance from source to measured sound pressure level

D_2 is distance from source to location of calculated sound pressure level

Sound levels are expressed in decibels, which are a logarithmic function. The formula to add one sound level (LA) to another sound level (LB) expressed in dB is:

$$LA + LB = 10\log10\ (10LA/10 + 10LB/10)\ dB$$

Applying the above equations, and based upon supplied sound energy levels for each piece of exterior mounted mechanical equipment, the noise level from the operational equipment was calculated. As described above, there are three existing off-site noise sensitive receptors in the vicinity of the project. These three sensitive receptors are provided in Figure 4.13-1 as ST-1, ST-2, and ST-3. Using the above-described noise level data and assumptions, the overall project noise level exposure was calculated for each of the three sensitive receptor locations. These noise levels are provided in Table 4.13-10, *Summary of Project-Related Operational Noise Levels at Receiver Locations*, in terms of the hourly L_{eq} and 24-hour Ldn noise level descriptors. Appendix H provides detailed worksheets used to calculate total project noise

levels at each of the three analyzed sensitive receptor locations. For the purpose of the calculations, WJVA applied the following assumptions:

- The loudest noise levels for the above-described range of noise levels for each noise- producing equipment was applied.
- All noise-producing equipment was in continuous, 24-hour operation.
- No acoustical shielding, ground absorption or atmospheric absorption was assumed. All noise levels applied only attenuation with increased distance from a point source (-6 dB/doubling of distance)
- The distances from each noise-producing equipment to each sensitive receptor was determined based upon the project site plan provided by the applicant (see Appendix H).

TABLE 4.13-10: SUMMARY OF PROJECT-RELATED OPERATIONAL NOISE LEVELS AT RECEIVER LOCATIONS

Receptor Site	1-Hour L_{eq} dBA	24-Hour Noise Exposure (Ldn dBA)
ST-1	39.4	45.8
ST-2	40.7	47.1
ST-2	33.2	39.6

SOURCE: Appendix H

Long-Term Operational Traffic Noise

The proposed project could include an operations and maintenance (O&M) building; however, routine maintenance activities would be limited in nature, requiring approximately 11 full-time equivalent employees. The number of traffic trips associated with employees stationed at the site would be expected to represent a small percentage of the existing average daily trip volumes on roadways servicing the project site. Because a doubling of the number of traffic trips on a roadway would be required in order to produce a 3 dB increase in traffic noise levels, long-term project traffic noise increases would remain well below a noticeable change. Project-related traffic noise levels are therefore considered less than significant and are dismissed from detailed analysis.

Operational Vibration Impacts

Vibration impacts associated with industrial and commercial facility operations are limited to large scale equipment with rotational components or involving repeated impact or "striking" movements (e.g., industrial grade compressors, stamping machines, printing presses), or with the maneuvering of heavy trucks or similar large-scale materials-transport equipment. The ongoing operation of the proposed solar facility would not involve rotational equipment, impact equipment, or heavy trucks. Consequently, long-term operation of the project would not be anticipated to generated perceptible vibration levels; operational vibration levels are therefore considered less than significant and are dismissed from detailed analysis.

Thresholds of Significance

The following criteria, as established in Appendix G of the CEQA Guidelines, were used 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 ground borne vibration or ground borne 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.

Project Impacts

Impact 4.13-1: The project could result in generation of a substantial temporary 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.

Short-Term Construction Noise

Construction Traffic

During project construction, the sensitive receptors located along the construction traffic route 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 project site would contribute to the existing traffic noise levels along access routes, potentially increasing traffic noise levels. Construction-generated vehicle traffic would include a mix of light-duty automobiles and trucks and heavy-duty trucks. The project would employ approximately 650 workers over the course of construction, with an average of 50 workers traveling to the site per day during construction, and an estimated average of 50 delivery trucks per day (Appendix L). Construction-related trips are anticipated to occur during the morning peak (7 to 9 a.m.) and afternoon peak (4 to 6 p.m.) periods Monday through Friday for 12 to 18 months. It is assumed that the workers will arrive in the AM peak period and leave during the PM peak period each day.

To experience a perceptible increase (i.e., 3 dB) in traffic noise levels, vehicle traffic would have to double due to project construction traffic. A 5 dB increase is typically considered a substantial traffic noise increase. Average daily traffic volumes are summarized in Table 5, *Roadway ADT Volumes and Analysis* of Appendix L, *Traffic Investigation for Proposed Sandrini Solar Park Project* prepared by Ruettgers & Schuler. As shown in Table 5 of Appendix L, project construction traffic would not double existing traffic on project roadways. Therefore, project's construction traffic would not result in a substantial increase in average daily traffic noise levels and impacts would be less than significant.

Construction Activities

As described above under the subheading *Methodology*, construction noise levels were calculated for various distances from construction activity, that generally correspond to the distance from the edge of the construction zones to three existing residential receptors, ST-1, ST-2, and ST-3 (see Figure 4.13-1) that could be impacted by construction activity noise. Table 4.13-11, *Average Construction Noise Levels at Closest Existing Residences*, provides the average construction noise levels at the identified residences and

compares these to the ambient noise levels recorded in the vicinity of these residences. These average noise levels would represent construction activity occurring immediately adjacent to the construction zone boundary, construction located internal to the site (and further from the boundary) would generate lower noise levels at the adjacent residences.

TABLE 4.13-11: AVERAGE CONSTRUCTION NOISE LEVELS AT CLOSEST EXISTING RESIDENCES

Receiver	Average Construction Noise Level (L_{eq} dBA)	Ambient Noise Level (L_{eq} dBA)	Change (dB)
ST-1	72	68.3	4
ST-2	78	70.1	8
ST-3	82	67.4	14

As illustrated in Table 4.13-11, average construction noise levels could exceed ambient noise levels by 4 to 14 dB. While a 4 dB increase would be just noticeable for most people, increases of 8 to 14 dB would be perceived as an approximate doubling of the sound level and would therefore be a substantial increase above ambient levels. As such, construction would result in a temporary substantial noise increase above ambient levels, resulting in a significant short-term noise impact.

Considering the 24 to 30 dB attenuation provided by residential structures from outdoor to indoor noise levels, even the maximum average construction noise levels reported in Table 4.13-11 would not exceed 60 dBA L_{eq} indoors, and should therefore not interfere with conversations or other daytime household activities. However, in the overnight period, construction noise could result in sleep interference. Therefore, mitigation is required in order to restrict construction to daytime hours to avoid sleep interference. Refer to Mitigation Measure (MM) 4.13-1 through MM 4.13-4, below.

Based upon the above discussion, project generated temporary construction noise levels would result in less than significant short-term noise impacts with the implementation of MM 4.13-1 through MM 4.13-4.

Mitigation Measures

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. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible.

b. 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.

c. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County of Kern's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9 p.m. and 6 a.m. on weekdays, and between 9 p.m. and 8 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.

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. Onsite 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: The construction contractor shall establish a Noise Disturbance Coordinator for the project during construction. The Noise Disturbance Coordinator shall be responsible for responding to any complaints about construction noise. The Noise Disturbance Coordinator shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground disturbing activities.

MM 4.13-3: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), including decommissioning, the project proponent/operator shall provide written notice to the public through mailing a notice, which shall include:

a. The mailing notice shall be to all residences within 1,000 feet of the project site, 15 days or less prior to construction activities. The notices shall include the construction schedule and a telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator.

b. A minimum of one sign, legible at a distance of 50 feet, shall be posted at the construction site, or adjacent to the nearest public access to the main construction entrance, throughout construction activities that shall provide the construction schedule (updated as needed) and a telephone number where noise complaints can be registered with the noise disturbance coordinator.

c. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.

MM 4.13-4 Adequate noise shielding shall be provided to the project's onsite transformers and inverters such that the existing ambient noise level at the nearest offsite residential structure

would not be exceeded by more than 5 dBA. The project proponent/operator shall submit photographic evidence of this technology and clearly demonstrate on a site plan where adequate noise shielding will be located, if necessary. No shielding shall be required if the increase in ambient noise level is 5 dBA or less.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.13-2: The project could generate excessive ground borne vibration or ground borne noise levels.

As described above under the subheading *Methodology*, construction vibration levels were calculated for various distances from construction activity, that generally correspond to the distance from the edge of the construction zones to existing residential receptors, with the closest residential receptor at 100 feet and the furthest at 300 feet. The calculated vibration levels are presented in Table 4.13-12, *Significance of Construction Vibration Levels at Typical Distances to Residential Receivers*, where they are also compared to the human annoyance significance threshold.

TABLE 4.13-12: SIGNIFICANCE OF CONSTRUCTION VIBRATION LEVELS AT TYPICAL DISTANCES TO RESIDENTIAL RECEIVERS

	PPV (in/sec)			
Equipment	**@ 100 feet**	**Exceed Annoyance threshold (0.2 in/sec)?**	**@ 300 feet**	**Exceed Annoyance threshold (0.2 in/sec)?**
Bulldozer (Large)	0.011	**No**	0.006	**No**
Bulldozer (Small)	0.0004	**No**	0.00019	**No**
Loaded Truck	0.01	**No**	0.005	**No**
Jackhammer	0.005	**No**	0.002	**No**
Vibratory Roller	.03	**No**	0.013	**No**
Caisson Drilling	.01	**No**	0.006	**No**
Vibratory Pile Driver	0.14	**No**	0.042	**No**

SOURCE: Caltrans 2020

With regard to the vibration levels reported in Table 4.13-12, vibration exposure at any single point outside the project site would vary depending on the proximity of construction activities to that point; with larger project sites, construction activities will tend to occur in a concentrated area, that moves around the site as construction of an element is completed. The significance threshold for damage to structures from vibration is 0.5 in/sec, or approximately double the human annoyance threshold level. Therefore, Project construction-related vibration would not have the potential to damage structures. Consequently, construction-related vibration resulting from the Project would result in less than significant vibration impacts.

Decommissioning

At such time as the Sandrini Solar Project 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.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.13-3: The project could result in generation of a substantial 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.

Long-Term Project Operational Noise

As described above under the subheading *Methodology*, WJVA calculated the overall project noise level exposure for each of the three existing closest residences to the Project site (ST-1, ST-2, and ST-3 as shown in Figure 4.13-1). These calculated noise levels are provided below in Table 4.13-13 in terms of the hourly L_{eq} and 24-hour L_{dn} noise level descriptors, with comparison to ambient levels and applicable residential exposure standards.

TABLE 4.13-13: SUMMARY OF PROJECT-RELATED OPERATIONAL NOISE LEVELS AT EXISTING RESIDENCES IN THE PROJECT VICINITY AS COMPARED TO AMBIENT LEVELS AND APPLICABLE STANDARDS

Receptor Site	Project Noise Level One-Hour L_{eq} dBA	Ambient Noise Level L_{eq} dBA	Project Noise Level Ldn dBA	Ldn Standard dBA	Significant Impact
ST-1	39.4	68.3	45.8		No
ST-2	40.7	70.1	47.1	65	No
ST-2	33.2	67.4	39.6		No

SOURCE: Appendix H

As shown in Table 4.13-13, the calculated operational noise levels for the project at the nearest existing residences would not increase ambient noise levels (the operational noise levels are approximately 20 db less than ambient, and the addition of project contributions would therefore not result in an increase on the

basis of logarithmic addition of the two levels). The project would also not result in noise levels that exceed the applicable standard of 65 dBA Ldn at the existing residences.

It should be noted that receiver ST-2 represents a parcel that is not included in the project site plan, but which is surrounded on all sides by solar panels and inverters of the proposed project. A 100-foot buffer was assumed between adjacent project components and the exterior living area of the existing residence on this parcel (at ST-2). The conclusion of the noise level calculations therefore indicates that noise levels would not be anticipated to exceed 41 dBA L_{eq} at distances 100 feet or greater from project boundaries; this would equate to an Ldn not greater than 47 dBA. As such, project operational noise levels on agricultural parcels adjacent to the project site would not result in a substantial increase in ambient noise levels, and would not exceed the applicable standard of 65 Ldn dBA, in the event that future residences were to be constructed on such adjacent parcels.

Based upon the above discussion, the project would not result in a substantial permanent increase in noise levels over ambient, and project generated operational noise levels would result in less than significant long-term noise impacts.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.13-4: The Project would not be located within the Kern County Airport Land Use Compatibility Plan, and would not expose people residing or working in the project area to excessive noise levels.

There are no public airports within two miles of the project. The closest non-public airport is the Creekside Airport located approximately 4.7 miles to the east of the project site. The Creekside Airport is privately owned and classified as a Private Use Airport with Federal Aviation Administration (FAA) identifier 5CL8. The Creekside Airport is not included in the Kern County Airport Land Use Compatibility Plan (Kern County 2012). However, as a private airport with limited flight operations, it is not anticipated that noise contours of 65 dBA CNEL or greater from airport operations would extend to the project site.

The Skydive San Joaquin Valley airstrip is located approximately 4,000 feet east of a project boundary at 12112 Copus Road, Bakersfield, CA 93313. The airstrip is limited to private use with Federal Aviation Administration (FAA) identifier 81CA. The airstrip runway (8/26) is 2,840 feet long and 60 feet wide, with one single-engine and one multi-engine aircraft based at the airstrip. (AirNav.com). With the runway oriented approximately north/south, and with only two aircraft operating from this airstrip, low altitude overflights of the project site would not be anticipated and the 65 dBA CNEL contour for the airstrip would likely not extend outside of the airstrip property.

Consequently, noise exposure at the project site from aircraft operations at regional private airports and airstrips would result in a less than noise significant impact.

Mitigation Measures

No mitigation measures would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, multiple projects, including several utility-scale solar energy production facilities, are proposed or are operational in the same general area surrounding the community of Lakeview. As shown in Table 3-4, *Cumulative Project List*, in Chapter 3, six solar energy projects are presently proposed, under construction, or operational in the same general area of Kern County. Additionally, other related projects in the surrounding areas have been included that were (1) submitted for plan processing, (2) approved by the County of Kern, and/or (3) engaged in active construction programs.

Construction

Construction noise is spatially limited, rarely extending to a distance greater than 0.25 miles from the project site. Of the list of projects in Table 3-4 in Chapter 3, only one is located within 0.25 miles of the project site (Maricopa East Solar). If construction of Maricopa East and the project were to occur at the same time; construction noise levels would be no more than 3 dB greater than the project by itself (assuming contributions from each project are equivalent). The 3 dB increase over project-only construction noise levels may be noticeable but would not change the overall significance of construction noise impacts. Also, assuming that each construction effort complies with construction schedule limitations from Section 8.36 of the Kern County Code of Ordinances, significant short-term noise impacts from cumulative construction projects should be avoided.

Operation

Operational noise levels from the project have been demonstrated to be approximately 20 dB lower than ambient levels at distances greater than 100 feet from project boundaries. Project operational noise levels would therefore not increase ambient noise levels, nor contribute substantially to the noise levels from other sources in the general vicinity of the project. There are no projects in Table 3-4 with boundaries that are within 100 feet of the project boundaries. As such, it is not anticipated the project would contribute in a substantial way to any cumulative significant community noise level impacts in the vicinity of the project site.

Mitigation Measures

Implement MM 4.13-1 through MM 4.13-4.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

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4.14 Public Services

4.14.1 Introduction

This section of the Environmental Impact Report (EIR) describes the affected environment and regulatory setting pertaining to public services, which include fire and law enforcement protection. This section also addresses the potential impacts on public services that would result from implementation of the proposed Sandrini Solar Project (project), and the mitigation measures to reduce those potential impacts. Information for this section was taken from numerous sources, including online service provider information and service provider plans, where applicable.

The Initial Study prepared for the proposed project determined that no impacts to schools or parks would occur as a result of project implementation; therefore, no further analysis is warranted (see Appendix A). For this reason, an impact analysis for schools and parks is not provided below.

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 800,000 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 55 fire engines, 4 ladder trucks, 41 patrol vehicles, 25 command vehicles, 6 dozers, 2 helicopters, 2 hazardous material response teams, and other ancillary vehicles and equipment. KCFD is staffed with 625 permanent employees, which includes 546 uniformed firefighters (KCFD 2021a).

The project site is located south of Bakersfield in the southern portion of the San Joaquin Valley in Central California, and would be served by Battalions 4 and 6 of the KCFD. These battalions predominantly cover Local Responsibility Area (LRA) lands and some State Responsibility Area (SRA) lands in the eastern portion of the battalion that adjoins Sequoia National Forest. There are 96,023 SRA acres in Battalion 4. The main accesses to the SRA within Battalion 4 are along State Highway 58, which runs east and west through the battalion and Breckenridge Road and northeast out of Bakersfield up into Sequoia Nation Forest on top of Breckenridge Mountain. Within the SRA of Battalion 4, there are no towns or cities, incorporated or unincorporated, and only one subdivision of consequence (KCFD 2009). Fire Station No. 53 (Old River), located at 9443 Taft Highway, is approximately 10.6 miles north of the project site and would be the primary responder to a fire event or emergency at the project site. In the event of a major fire or where additional response support is needed, other stations would be called on to respond as necessary, including Fire Station No. 52 (Greenfield), located at 312 Taft Highway, and Fire Station No. 55 (Tejon Ranch), located at 5441 Dennis McCarthy Drive. Information on the three closest fire stations to the project site is

provided in Table 4.14-1, *List of Nearby Fire Stations*. In rural settings similar to that of the project site, the average response time is approximately 11 minutes (CPSM 2017).

The project site is identified as an LRA by the County of Kern (County) and the California Department of Forestry and Fire Protection (CAL FIRE). The KCFD Wildland Fire Management Plan designates a majority of the project site as being located within an Agriculture/Non-Wildland zone, with a small area near the eastern portion of the project site within a moderate fire hazard severity zone (KCFD 2009). The project site is designated LRA Unzoned by CAL FIRE (CAL FIRE 2007, 2021).

The County applies and uses 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 EMS system in Kern County and is responsible for coordinating all system participants in the County, which includes the public, fire departments, ambulance companies, other emergency service providers, hospitals, and emergency medical technician training programs throughout Kern County. 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 preventive health care. EMS also provides certification and recertification for emergency medical technicians, paramedics, specialized nurses, and specialized dispatchers.

The closest hospital to the project site is the Mercy Hospital Southwest–Bakersfield, located at 400 Old River Road, Bakersfield, approximately 16 miles north of the project site. The next closest hospital to the project site is the Mercy Hospital Downtown–Bakersfield, located at 2215 Truxtun Avenue, Bakersfield, approximately 18 miles north of the project site.

An inventory of fire facilities in the project area is provided 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.

TABLE 4.14-1: LIST OF NEARBY FIRE STATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCFD	Fire Station No. 53	9443 Taft Highway Bakersfield, CA 93311	10.6 miles north of project site
KCFD	Fire Station No. 52	312 Taft Highway Bakersfield, CA 93311	12.2 miles northeast of project site
KCFD	Fire Station No. 55	5441 Dennis McCarthy Drive Lebec, CA 93243	12.3 miles southeast of project site

SOURCE: KCFD 2021b
KCFD = Kern County Fire Department

The Kern County Fiscal Year 2021–2022 preliminary recommended budget shows ongoing deficiencies in funding for staffing and a $50 million backlog in capital equipment costs for the KCFD. 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 (County of Kern 2021).

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 Kern County, which includes the project site. 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, the regulation of noncriminal activity, and related support services, such as patrolling off-highway-vehicle recreation areas in the desert and mountainous areas of Kern 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 staffed with 1,202 sworn and civilian employees, 567 deputy sheriffs, 338 detention deputy positions, and 297 professional support staff (KCSO 2021a). 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 2021b). The nearest substation that would provide service to the project site is the Lamont substation, located approximately 13 miles northeast of the project site (Site 4), at 12022 Main Street, Lamont, California. This substation provides services to approximately 15,000 residents and businesses located throughout an 840-square-mile area. This includes the unincorporated township of Lamont and the growing area of the Tejon Ranch (KCSO 2021c). Other substations in proximity to the project site are the Taft substation and Kern County Sheriff's Office Headquarters. Information on the three closest substations to the project site is included in Table 4.14-2, *List of Nearby Police Substations*.

TABLE 4.14-2: LIST OF NEARBY POLICE SUBSTATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCSO	Lamont Substation	12022 Main Street Lamont, CA 93241	13.6 miles northeast of the project site
KCSO	Taft Substation	312 N Lincoln Street Taft, CA 93268	20.3 miles northeast of the project site
KCSO	Kern County Headquarters	1350 Norris Road Bakersfield, CA 93308	21.4 miles north of the project site

KCSO = Kern County Sheriff's Office

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 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. Average response time for the KCSO is 5 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 non-emergency call could be 8 minutes or more, depending on staffing and the number of other calls for service. In some areas, response may not occur at all for non-emergency and low-crime misdemeanor offense calls due to funding deficiencies.

The County's Fiscal Year 2021–2022 preliminary recommended budget shows ongoing deficiencies in funding for staffing, training, and equipment. The report found that the current funding status, with one time infusion of funding, is not sustainable (County of Kern 2021).

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 (CHP 2021a). The CHP has a mutual aid agreement with the KCSO.

The CHP is divided into eight divisions that provide services in areas of California (CHP 2021b). The project site is within the jurisdiction of the Central Division, which encompasses the San Joaquin Valley with two long freeway segments, a 244-mile stretch of State Route 99 and a 275-mile stretch of Interstate 5, which run the length of the Central Division (CHP 2021c). The nearest CHP office to the project site is the Central Division, located at 1033 Lebec Road in the community of Lebec, approximately 24.3 miles southeast of the project site.

Schools, Parks, and Other Facilities

As described above, the Initial Study prepared for the project 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.

There are no schools within 5 miles of the project site. The nearest school is Arvin High School, located approximately 17 miles northeast at 900 Varsity Road, Arvin, California 93203. Arvin High School serves the rural communities of Arvin, Lamont, and Weedpatch, and is one of 18 comprehensive, 4-year high schools in the Kern High School District (Arvin High School District 2021). Other school districts located in the vicinity include Arvin Union Elementary School District, El Tejon Unified, Maricopa Unified, Lakeside Union Elementary School District, General Safter Elementary School District, and Greenfield Union Elementary School, which consist of 27 other school facilities (Kern County Superintendent of Schools 2021).

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 and Recreation manages 8 regional parks, totaling 4,282 acres, and 40 neighborhood parks, totaling 293 acres (County of Kern 2010).

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 2021). Additionally, there are currently 37 post offices that serve the County (USPS 2021). Furthermore, there are currently 13 facilities serving the Superior Court of California in Kern County (Superior Court of California 2019).

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 relevant to public services.

State

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 fires, explosions, and dangerous conditions in new and existing buildings, structures, and premises. The California Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the California Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings and structures throughout California. The California Fire Code includes regulations regarding fire-resistance-rated construction; fire protection systems, such as alarm and sprinkler systems; fire service features, such as fire apparatus access roads; means of egress; fire safety during construction and demolition; and wildland/urban interface areas.

California Department of Forestry and Fire Protection

Under Title 14 of the California Code of Regulations (CCR), CAL FIRE has the primary responsibility for implementing wildfire planning and protection for SRAs. CAL FIRE 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 CAL FIRE's jurisdiction (CAL FIRE 2021).

CAL FIRE adopted Fire Hazard Severity Zone maps for the SRAs in November 2007. Fire hazard is a way to measure 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 the burning fire brands that the fire sends ahead of the flaming front. The project site is located within an area of moderate fire hazard severity zone and within an SRA (CAL FIRE 2007).

In addition to wildland fires, CAL FIRE's planning efforts involve responding to other types of emergencies, including medical aid, hazardous material spills, swift-water rescues, search and rescue missions, civil disturbances, train wrecks, floods, and earthquakes. Through contracts with local governments, CAL FIRE provides emergency services in 36 of California's 58 counties (CAL FIRE 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 for a

development project. The California Franchise Tax Board 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 2021); it is not an exemption. The installation of a qualifying solar energy system would not result in either an increase or a decrease in the assessment of the existing property. The solar exclusion 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" (California State Board of Equalization 2021).

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 2023–2024 fiscal year. The statue 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. Large-scale commercial scale solar projects currently pay $1,511,000 annually (County of Kern 2020).

This revenue is the only 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 preliminary budget includes additional one-time revenue from COVID-19 pandemic relief funds that will not occur again. Although the Kern County Assessor final role shows a 0.09% increase from fiscal year 2020–2021, this is significantly less than the 2.8% growth from the previous fiscal year. The 2019–2020 budget was the end of a 4-year fiscal emergency with a deficient of over $40 million. That deficit continues to impact the ability of the County to provide services and to address a significant backlog accumulated over those 5 years for equipment and maintenance (County of Kern 2020).

Local

Kern County General Plan

The project site is located within the boundaries of Kern County, under the goals and policies of the Kern County General Plan. The policies, goals, and implementation measures in the Kern County General Plan for public services applicable to the project are provided below (County of Kern 2009). 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, Conservation and Open Space Element

1.4: Public Facilities and Services

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 4: The provision of parks and recreational facilities of varying size, function, and location to serve County residents will be encouraged. Special attention will be directed to providing linear parks along creeks, rivers, and streambeds in urban areas.

Policy 5: Seek to provide recreational facilities where deficiencies have been identified.

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 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

Goals

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 assesses the wildland fire situation throughout the SRA within the County. The Wildland Fire Management 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 planning area. The Wildland Fire Management Plan 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 KCFD Wildland Fire Management Plan designates a majority of the project site as being located within an Agriculture/Non-Wildland zone (KCFD 2009). The project site is designated LRA Unzoned by CAL FIRE (CAL FIRE 2007, 2021).

Kern County Fire Department Hazard Mitigation Plan

The purpose of the KCFD Multi-Jurisdiction Hazard Mitigation Plan is to reduce or eliminate long-term risk to people and property from natural hazards and their effects in Kern County. The Hazard Mitigation Plan includes specific recommendations for actions that can mitigate future disaster losses, and provides a review of the County's current capabilities to reduce hazards impacts. This multi-jurisdictional plan includes Kern County and the incorporated municipalities of 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 5 years (KCFD 2020).

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 KCFD Unit Strategic Fire Plan, adopted in March 2018, is the most current document that assesses the wildland fire situation throughout the SRA within Kern 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 planning area. The plan provides for an analysis of fire hazards, assets at risk, and level of services to assess the existing levels of wildland protection services; the plan also 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; hosting of three wildfire safety expos in Battalions 1, 5, and 7; and awarding three SRA fuel reduction grants for a total of $500,000. The plan gives an overview of KCFD battalions, ranks these areas in terms of priority needs, and identifies the areas of the SRA. According to the plan, 69% of Kern County is within an 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/Foothill. The project site is located within Battalions 4 and 6 (Valley/Foothill), which are composed mostly of LRA lands on the south and east sides of Bakersfield (KCFD 2018).

Fire Prevention Standard No. 503–507, Solar Panels

The KCFD Fire Prevention Division adopted Standard Nos. 503–507, Solar Panels (Ground Mounted, Commercial & Residential), on March 27, 2019. The standard is implemented in accordance with the 2016 California Fire Code 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 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.

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 the KCFD and KCSO to provide this level of service and maintain the regular level of service provided throughout Kern 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.

Additionally, 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 California Environmental Quality Act (CEQA) Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in CEQA Guidelines Appendix G, to determine if a project would have a significant adverse effect on public services:

A project would have a significant impact on public services if it would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
    1. Fire Protection
    2. Law Enforcement Protection
    3. Schools
    4. Parks
    5. Other Public Facilities

Prior to the preparation of this EIR, on April 30, 2021, Kern County issued an Initial Study/Notice of Preparation for the project (see Appendix A). The purpose of the Initial Study/Notice of Preparation is to describe the proposed project, specify the project location, and identify potential environmental impacts pursuant to CEQA Guidelines Appendix G. The Initial Study evaluated the above CEQA criteria and determined that the project has the potential for significant impact on (i) Fire Protection, (ii) Police Protection, and (v) Other Public Facilities. The Initial Study checklist also determined that the project would have no impact on (iii) Schools or (iv) Parks because there are no schools in the project vicinity and the proposed project would not result in substantial increase in population that would increase the utilization of public parks and recreational facilities. Therefore, those two criteria have not been brought forth for further analysis in this EIR, and they are not included as part of the impact analysis.

Project Impacts

Impact 4.14-1: The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any public services.

Fire Protection

Construction

As described in Chapter 3, *Project Description*, approximately 650 workers per day would be required during construction of the proposed project. The presence of the construction workers would be temporary and would last approximately 12 to 18 months. The project site is not located within an area of high or very high fire hazard.

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 12- to 18-month 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 phase, impacts to fire protection services and facilities during project construction would be less than significant with implementation of MM 4.14-1.

Operation

Following project construction, operational staff would include up to 11 full-time equivalent employees who would be responsible for operations and maintenance related to ongoing facility operations. Employees would be responsible for activities such as cleaning photovoltaic panels; monitoring electricity generation; providing

site security; and replacing inverters, wiring, and photovoltaic modules. Battery components for the proposed energy storage component of the project would be equipped with appropriate fire suppression systems and electrical control units. All battery enclosures would be equipped with fire safety and protection systems compliant with applicable U.S. national safety standards and codes such that fire hazards would be reduced and/or avoided. The project would not change existing demand for fire protection services because operation of the project would not result in a substantial increase in employees or populations. Therefore, the project would not substantially increase the need for new fire department staff or new facilities.

Operation and maintenance activities could introduce fire risks to the project site from maintenance vehicles. However, all maintenance activities would be required to comply with the Fire Safety Plan implemented per MM 4.14-1, which would help reduce fire risks on site. In addition, all project facilities would be designed and constructed in accordance with the California Fire Code and Kern County Fire Code such that fire hazards would be reduced and/or avoided.

Furthermore, the project operator would be required to pay a Kern County Cumulative Impact Charge (CIC), through implementation of MM 4.14-2. Payment of the CIC would 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 the provision of adequate public services and facilities. Therefore, potential operational impacts on fire protection services would be reduced to less than significant with implementation of MM 4.14-1 and MM 4.14-2, and the project would not result in the need for new or physically altered KCFD facilities.

Law Enforcement Protection

Construction

As described in Section 4.14.2, *Environmental Setting*, the KSCO provides law enforcement protection services for the project site and surrounding areas. The Lamont substation is located approximately 13.6 miles northeast of the project site. The nearest CHP office to the project site is the Central Division located at 1033 Lebec Road in the community of Lebec, approximately 24.3 miles southeast of the project site. Similar to fire protection services, the need for law enforcement services could potentially increase during construction activities.

The project site is located in a relatively remote location surrounded primarily by agricultural uses. Land uses in the region consist largely of agriculture, with a mix of row crops and grazing land, and is unlikely to attract attention that would make project facilities susceptible to crime. Therefore, a substantial increase for KCSO services is not expected. However, construction activities may temporarily increase traffic volumes along Interstate 5 and local roadways during the 12- to 18- month 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 thus would not have a significant adverse effect on the KCSO's protective service provision or CHP's ability to patrol the highways.

Additionally, fences would be installed around the perimeter of each site, substation, and other areas requiring controlled access for safety and security purposes. Fencing would 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.

Although project construction would increase the number of personnel on the project site, the increase would be temporary, and the nature of the work would not substantially increase the potential for crime or events

necessitating law enforcement services. Therefore, new or physically altered KCSO or CHP facilities would not be required to accommodate the temporary and limited increase in needs from the project during construction. Impacts to law enforcement services during project construction 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 rural area and is thus unlikely to attract attention that would make project facilities susceptible to crime. Additionally, the project would be enclosed by 6- to 8-foot-high chain-link fencing. The security fencing around the site perimeter and controlled access gates would minimize the need for KCSO surveillance and response during project operation. The additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to significantly impact traffic (see Section 4.15, *Transportation*, for more details). Therefore, impacts to the CHP patrol are not anticipated.

Additionally, the project would implement MM 4.14-2 to provide CIC funding. Payment of the CIC would support 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 thus ensuring the provision of adequate public services and facilities. Therefore, impacts to law enforcement protection resulting from project operation would be less than significant with implementation of MM 4.14-2.

Other Public Facilities

Construction

As stated above, 650 construction workers are anticipated to be on site during peak construction periods. The presence of construction workers at the project site would be temporary through the duration of the approximately 12- to 18- month construction period. These construction workers would likely come from an existing local and/or regional construction labor force, and would not likely relocate permanently, resulting in an increase to the local population. Therefore, the short-term increase in local employment associated with 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 other public facilities, such as libraries or post offices. Project construction workers would not increase demand for public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or expansion of recreational facilities that 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

Operational employees would intermittently visit the project site for routine inspection, maintenance, and repair of solar arrays and accessory components. Up to 11 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 Kern County, the resulting addition of potential families to this area would not result in a substantial increase in

the number of users of other public facilities, such as libraries or post offices. 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 the project require the construction or expansion of recreational facilities that 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.

Additionally, utility-scale solar facilities have an exclusion from property taxes on facility equipment. This property tax exclusion can result in a project not providing the revenue needed to provide services and facilities for both the project and the community that can prevent physical deterioration of neighborhoods. If the land were built with another type of land use, it would produce property tax revenue to provide services and facilities and thus, would help to prevent physical decline of residential homes and businesses due to vacancy and inability for response relative to all public services, including code enforcement, law enforcement, fires, roads, and health and safety issues. The ongoing effect of this active solar tax exclusion over the life of the more than 60,000 acres of solar projects in Kern County has resulted in a loss to the General Fund over the last 10 years of more than $103 million, and has deepened the ongoing fiscal emergency of the County (The Bakersfield Californian 2021). Public policies in the Kern County General Plan require development to address economic deficiencies in public services and facilities costs.

As such, MM 4.14-2 requires payment of a CIC calculated on net acreage that excludes assessable structures and permanent improvements (operation and maintenance building and energy storage system) and legally unbuildable land (recorded easements or on-site conservation areas). The charge factor is calculated based on the fair share under the Government Code that the project would have paid if the Tax Exclusion were not in effect. The amount the project should pay is calculated as $550 per net acre annual charge. 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. Because this project application had already been deemed complete and commenced processing when the December 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 MM 4.14-2 for the project 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, that entity would pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount would be paid for all years of operation, through implementation of MM 4.14-3. Through implementation of MM 4.14-4, the project proponent/operator would work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. Additionally, with implementation of MM 4.14-5, the project operator would submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors working on the project site to hire at least 50% of their workers from local Kern County communities. Implementation of MM 4.14-1 through 4.14-5 would reduce impacts to public services to a level that is 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 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 shall have their factory-installed (type) mufflers maintained 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.

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

   1. Any building permit application 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.

   2. The map for either the total project or a phase shall calculate the 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 or on-site conservation lands.

   3. Formula: Net Acreage = (2)A minus the sum of [(2)B + (2)C + (2)D].

   4. Temporary storage areas or non-permanent commercial coaches or cargo containers for construction or operations are not eligible for inclusion under (2)B or (2)C, above.

   5. All areas of buildings, accessory improvements, and easement used in the calculations shall be shown on the submitted Phase Map.

6. 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 CIC

1. 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.

2. Payments shall be made to the Planning and Natural Resources Department for transfer directly to the Kern County Administrative Office Fiscal Division and labeled "Cumulative Impact Charge (CIC)," with the project name and phase number.

3. 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 CIC.

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 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 Kern County Administrative Office Fiscal Division and labeled "Supplemental Cumulative Impact Charge (SCIC)" with the project name and phase number.

MM 4.14-4: The project proponent/operator shall work with the County of Kern (County) to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include 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 the 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 the 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 that will be working on the project site to hire at least 50% 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 MM 4.14-1 through MM 4.14-5, impacts would be less than significant.

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, fire and sheriff service impacts related to the project would be less than significant with mitigation. 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 on site. MM 4.14-2 through MM 4.14-5 require the project proponent to pay a CIC to reduce significant impacts to fire or law enforcement protection services resulting from the project. With payment of the required CIC assessed by the Kern County Planning and Natural Resources Department, any slight contribution the project would have on the need for additional fire or law enforcement protection services, facilities, or personnel required would be appropriately funded. Similar to the project, all other past, present, and reasonably foreseeable future projects located within these fire and law enforcement service areas were or would be required to pay this CIC fee, if deemed appropriate by the Kern County Planning and Natural Resources Department. These projects would also be required to undergo environmental review, in compliance with the requirements of CEQA. Should potential impacts to public services be identified, appropriate mitigation would be prescribed that would reduce impacts to less than significant levels.

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.

Mitigation Measures

Implement Mitigation Measures MM 4.14-1 through MM 4.14-5.

Level of Significance after Mitigation

With implementation of MM 4.14-1 through MM 4.14-5, cumulative impacts would be less than significant.

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4.15 Transportation

4.15.1 Introduction

This section of the Environmental Impact Report (EIR) describes the affected environment, regulatory setting, and impacts for traffic and transportation related to implementation of the proposed Sandrini Solar Project (project). It also describes mitigation measures that would reduce these impacts, where applicable.

Pursuant to Senate Bill (SB) 743, the focus of transportation analyses changed from level of service (LOS) or vehicle delay to vehicle miles traveled (VMT). The related updates to the California Environmental Quality Act (CEQA) Guidelines required under SB 743 were approved on December 28, 2018. This new methodology was required to be used statewide beginning July 1, 2020. At the time of this writing, the County of Kern (County) as the lead agency under CEQA, has not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Therefore, guidance from the California Governor's Office of Planning and Research's (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) was relied on in this EIR (OPR 2018). Additionally, the County's General Plan LOS consistency requirement included in this section, which has been provided for informational purposes, is based primarily on the project's Traffic Impact Analysis (TIA) prepared by Ruettgers & Schuler (2021), titled Traffic Investigation for Proposed Sandrini Solar Park Project in Southern Kern County, CA, included as Appendix L to this EIR.

4.15.2 Environmental Setting

The project site is located on approximately 3,469.87 acres in southern Kern County, approximately 10 miles south of the City of Bakersfield near the unincorporated communities of Mettler, Kern Lake, and Lakeview. As described in full detail in Chapter 3, *Project Description*, of this EIR, the project is split into five sites and is generally bounded by Old River Road, State Route (SR) 99, and SR-166. Access to Sites 1, 2, and 3 is provided via Old River Road, which bisects Site 2; Sites 2 and 3 are also accessible via Copus Road; Site 4 is not geographically connected to Sites 1, 2, 3, or 5, and is accessed from Copus Road; Site 5 would be preserved as an Applicant Proposed Conservation Area, and therefore no access is proposed. Major components of the circulation system are discussed below and shown in Figure 3-1, *Site Vicinity*, and Figure 3-4, *Site Plan*, in Chapter 3, *Project Description*, of this EIR.

Regional Setting

Major Highways

The project site is located near three major highways that would provide access to the general vicinity of the project during the construction and operation phases. Interstate (I) 5 is the largest highway that would

provide regional access to the project site from the north and south. SR-166 intersects with I-5 and SR-99 and runs east of Site 4. These highways are further described below.

Interstate 5 is a major freeway that extends north from the Mexican border to the Canadian border and provides access for goods movement, shipping, and travel. I-5 crosses the western portion of Kern County and is designated as an arterial/major highway by the Kern County General Plan Circulation Element (County of Kern 2009). In the vicinity of the project, I-5 is a four-lane divided freeway with interchanges on Copus Road, and is the primary regional transportation facility. North of the project site, I-5 travels northwest along the west side of the San Joaquin Valley toward Northern California. South of the project site, I-5 begins climbing into the Tehachapi Mountains toward Tejon Pass and into Southern California. I-5 is located approximately 1 mile east of Site 5.

SR-166 is a two-lane highway that runs east/west across a southern portion of Kern County, providing regional access from I-5 to SR-99 and SR-33. SR-166 is located approximately 2.5 miles south of Site 3.

SR-99 is a north/south state highway east of the project site that connects many of the major cities in the San Joaquin Valley. SR-99 begins approximately 6 miles south of the project site at a "Y" junction with I-5 as a six-lane freeway traveling north toward Bakersfield.

Public Transportation

Public transportation in Kern County is provided by Kern Transit, which offers 17 fixed routes throughout Kern County and a dial-a-ride general public transportation service for residents in most communities. Route 130 provides fixed-route scheduled bus service between Bakersfield and Santa Clarita on I-5, with stops in the communities of Bakersfield, Grapevine, Frazier Park, and Santa Clarita. No public transit routes pass or stop near the project site (Kern Transit 2021).

Non-Motorized Transportation

There are 67 miles of existing bicycle facilities in the unincorporated portions of Kern County. However, due to the rural location of the project, there are no dedicated bicycle or pedestrian facilities in the immediate vicinity.

Railways

The closest railway, the Sunset Subdivision, is operated by the San Joaquin Valley Railroad (SJVR) and is located approximately 3.5 miles north of the project site (County of Kern 2011).

Airport Facilities

Airport facilities located within a 20-mile radius of the project site include the following:

Skydive San Joaquin Valley is located off of Copus Road, immediately adjacent to the southeast boundary of project Site 3. The skydive facility offers skydiving instruction and experiences to the public (Skydive San Joaquin Valley 2021). The skydive facility is located on 160 acres of privately owned property and has a 3,000-foot runway.

Creekside Airport is located approximately 7 miles northeast of the project site and is a private use airport. The airport has a 2,000-foot asphalt/turf runway that serves general airport craft, receives no regularly scheduled flights, and is not publicly accessible.

Costerisan Farm Airport is located approximately 10 miles north of the project site and is a private use airport. The airport has a 2,500-foot turf runway that serves general airport craft, receives no regularly scheduled flights, and is not publicly accessible.

Bakersfield Municipal Airport is a city-owned and public use airport that covers an area of 253 acres with an asphalt surface. This airport is mostly used for general aviation and is located approximately 16 miles north of the project site (City of Bakersfield 2021).

Taft-Kern County Airport-L17 is located approximately 18 miles west of the project site and is a small local airport open to the public. The airport has a 3,283-foot asphalt runway (Runway 7) and a 1,001-foot asphalt runway (Runway 25). The County of Kern Department of Airports owns Taft-Kern County Airport-L17 (Kern County 2020).

Traffic Analysis

The project TIA evaluated the following intersections for traffic; these intersections were selected based on guidelines in the California Department of Transportation (Caltrans) publication, Guide for the Preparation of Traffic Impact Studies (Caltrans 2002).

1. Old River Road and Bear Mountain Boulevard (SR-223)
2. Wible Road and Bear Mountain Boulevard (SR-223)
3. Costajo Road and Bear Mountain Boulevard (SR-223)
4. SR-99 Northbound On-/Off-Ramp and Bear Mountain Boulevard (SR-223)
5. Old River Road and I-5 Northbound Ramps
6. Old River Road and I-5 Southbound Ramps
7. Wible Road and Millux Road
8. Old River Road and Copus Road
9. I-5 Southbound On-/Off-Ramp and Copus Road
10. I-5 Northbound On-/Off-Ramp and Copus Road
11. SR-99 Southbound On-/Off-Ramp and Copus Road
12. Mettler Frontage Road and Copus Road
13. Mettler Frontage Road and SR-99 Northbound On-Ramp

Table 4.15-1, *Existing Peak-Hour Traffic Levels of Service Summary for Intersections*, shows the LOS recorded for the above intersections serving the project area in 2020 per the project TIA (Appendix L). LOS is commonly used as a qualitative description of intersection operations. LOS is based on the capacity of the intersection, the signal timing, and the volume of traffic (turning movements). For Kern County, LOS B indicates "Stable operation: an occasional approach phase is fully used. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays." LOS C indicates "Stable operation: major approach phase may become fully used and most drivers feel somewhat restricted. Acceptable delays" (Kern Council of Governments 2018).

TABLE 4.15-1: EXISTING PEAK-HOUR TRAFFIC LEVELS OF SERVICE SUMMARY FOR INTERSECTIONS

Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Old River Road and Bear Mountain Boulevard (SR-223)	A	B
Wible Road and Bear Mountain Boulevard (SR-223)	B (Northbound) A (Southbound)	B (Northbound) B (Southbound)
Costajo Road and Bear Mountain Boulevard (SR-223)	B	C
SR-99 Northbound On-/Off-Ramp and Bear Mountain Boulevard (SR-223)	C	C
Old River Road and I-5 Northbound Ramps	A	A
Old River Road and I-5 Southbound Ramps	A	A
Wible Road and Millux Road	A	A
Old River Road and Copus Road	A	A
I-5 Southbound On-/Off-Ramp and Copus Road	A	A
I-5 Northbound On-/Off-Ramp and Copus Road	A	A
SR-99 Southbound On-/Off-Ramp and Copus Road	A	A
Mettler Frontage Road and Copus Road	A	A
Mettler Frontage Road and SR-99 Northbound On-Ramp	A	A

SOURCE: Appendix L

LOS = level of service

4.15.3 Regulatory Setting

Federal

Federal Aviation Administration

The Federal Aviation Administration (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 activities or alterations must notify the Administrator of the FAA of the following:

- 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.
  - 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.
- 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. The Central Valley and western portions of Kern County (i.e., including the project site and surrounding area) are 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).

Senate Bill 743

SB 743 was signed into law September 2013 and includes several changes to CEQA for projects located in areas served by transit (e.g., transit-oriented development). Most notably with regard to transportation and traffic assessments, SB 743 changes the way that transportation impacts are analyzed under CEQA (see California Public Resources Code [PRC] Section 21099). SB 743 required the OPR to amend the CEQA Guidelines to exclude LOS and auto delay when evaluating transportation impacts.

With implementation of SB 743, new criteria have been established to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. The Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA (OPR 2016) provided recommendations for updating the CEQA Guidelines in response to SB 743 and contained recommendations for a VMT analysis methodology in an accompanying Technical Advisory (OPR 2018).

The Guidelines on Evaluating Transportation Impacts, including the Technical Advisory, recommended use of automobile VMT per capita as the preferred CEQA transportation metric, along with the elimination of automobile delay/LOS for CEQA purposes statewide. PRC Section 21099 and CEQA Guideline Section 15064.3 reflect this change. Under PRC Section 21099, automobile delay, as measured by LOS or similar measures of traffic congestion or vehicular capacity, is not considered a significant effect on the environment.

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 (County of Kern 2009). 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. The design LOS for Kern County is LOS C. The minimum LOS for conformance with the Kern County General Plan is LOS D.

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 LOS D for all roads throughout the County.

2.3.3: Highway Plan

Goals

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 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. The Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4: Future Growth

Goals

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.

2.3.10: 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 CMP. 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 Plan (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.

Policy 2: Start a program that monitors truck traffic operations.

Policy 3: Promote a monitoring program of truck lane pavement condition.

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 (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 transportation system performance and 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 LOS performance standards and air quality improvement. The program attempts to link land use, air quality, transportation, and 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 adopted on August 16, 2018 (Kern Council of Governments 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 SB 375.

The California Air Resources Board set Kern County greenhouse gas emissions reductions from passenger vehicles and light-duty trucks by 5% per capita by 2020 and 10% 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 2018 RTP/SCS. 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 (Kern Council of Governments 2018).

The intent of the SCS is to achieve the state's emissions reduction targets for automobiles and light trucks. The SCS also provides 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 (Kern Council of Governments 2018).

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The financial 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 Council of Governments 2018).

Kern County Airport Land Use Compatibility Plan

The Kern County Airport Land Use Compatibility Plan establishes procedures and criteria to assist the County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses (County of Kern 2012). As described under the subheading *Regional Setting*, the closest airports to the project site are Skydive San Joaquin Valley Inc., Creekside Airport, Costerisan Farm Airport, Bakersfield Municipal Airport, and Taft-Kern County Airport L17. The project site not located within a designated Airport Land Use Compatibility Zone.

4.15.4 Impacts and Mitigation Measures

Methodology

This EIR relies on VMT as the basis for evaluating transportation impacts under CEQA. The project's VMT analysis is consistent with the recent guidance provided in OPR's Technical Advisory.

LOS effects from the project have been documented in the project's TIA (Appendix L of this EIR). The TIA is a planning-level LOS analysis for daily/peak-hour traffic on study area intersections that will be used to access the project site. Subject intersections are outlined under the subheading *Traffic Analysis*. LOS assessment is based on estimated traffic volumes associated with construction activities and operational activities, and is included for informational purposes only. To assess traffic effects to roadway segments and intersections in the vicinity, the TIA recorded average daily traffic for 12 roadway segments, and AM and PM peak-hour LOS for 13 intersections for 2020 (existing conditions), 2024 (project), and 2024+ project conditions. The TIA also included in its analysis cumulative traffic generated by other projects, as provided by the County, within a 6-mile radius of the project site.

Traffic effects from implementation of the proposed project were evaluated by establishing trip generation rates for the construction and operational phases of the project. Trip generation is based primarily on the numbers of workers and the types of equipment that would be used. 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 each land use or project includes both inbound and outbound trips.

Construction Trip Generation

Traffic generated during the construction phase of the project would include personnel vehicles and heavy trucks. These vehicles would access the project site by way of Old River Road, Wible Road, and Copus Road. The TIA estimated trips generated from peak project construction by anticipating an average of 50 workers on site per day. This assumption resulted in an estimation of 100 daily personal vehicle trips (combined inbound and outbound).

Total construction-related trip generation was also adjusted to account for heavy truck traffic. The TIA followed the Highway Capacity Manual guidelines of converting heavy truck volumes to passenger-car-equivalent volumes by using a factor of 1.7 trips per day. Heavy truck trips were estimated to be 50 per day and multiplied by a factor of 1.7 to account for effective reduction in free-flow speed caused by the presence of heavy vehicles in traffic flow. The TIA assumed that heavy trucks would enter the construction sites throughout the day; therefore, only a portion of the heavy truck trips are included in AM and PM peak hour trips (Appendix L).

In total, the project would generate an estimated maximum of 64 morning peak-hour trips and 64 afternoon peak-hour trips. Trip generation estimates for construction traffic are presented in Table 4.15-2, *Project Trip Generation – Construction*.

TABLE 4.15-2: PROJECT TRIP GENERATION – CONSTRUCTION

			AM Peak-Hour Trips		PM Peak-Hour Trips	
Traffic Type	**Variable**	**ADT**	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Personnel	50	100	50	0	0	50
Heavy Trucks	50	170[1]	14[2]	0	0	14[2]
Total Trips		**270**	**64**	**0**	**0**	**64**

SOURCE: Appendix L

ADT = average daily traffic

[1] Represents passenger-car equivalent for heavy truck traffic using a factor of 1.7.

[2] Represents trips arriving and departing during peak hours only.

Operations and Maintenance Trip Generation

The project would be operated by up to 11 full-time equivalent staff for operations and maintenance. Operations and maintenance staff would visit various parts of the site for inspection, security, maintenance, and system monitoring purposes.

The project would also involve solar panel washing once every 4 years. This activity would necessitate approximately six personnel and five water trucks. The water truck trips would enter and exit the project site during peak hours, along with all full-time equivalent staff and cleaning crew personnel. This activity represents the highest generator of trips for the operation and maintenance phase of the project; therefore, it is assessed for purposes of daily operational trip generation. Trip generation estimates for traffic accessing the project during this activity are presented in Table 4.15-3, *Project Trip Generation – Operation and Maintenance*.

TABLE 4.15-3: PROJECT TRIP GENERATION – OPERATION AND MAINTENANCE

			AM Peak-Hour Trips		PM Peak-Hour Trips	
Traffic Type	**Variable**	**ADT**	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Personnel	6	12	6	0	0	6
Heavy Trucks	5	10	5	0	0	5
Total Trips		**22**	**11**	**0**	**0**	**11**

SOURCE: Appendix L.

ADT = average daily traffic

Vehicle Miles Traveled Evaluation

Pursuant to the requirements of SB 743, the TIA also evaluated the project in terms of VMT based on the CEQA Guidelines. This evaluation included project construction, operation, and maintenance. Guidelines for assessing and screening project VMT under CEQA are contained in OPR's Technical Advisory (OPR 2018).

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 traffic.

A project could have a significant adverse effect on transportation if it would:

a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities as follows:
    i. Kern County General Plan LOS D
b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3(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); or
d. Result in inadequate emergency access.

Project Impacts

Impact 4.15-1: The project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

Construction

The Kern County General Plan identifies standards for maintaining an adequate LOS for County streets and intersections (County of Kern 2009). To evaluate project consistency with the General Plan Circulation Element, a TIA was prepared (Appendix L). As previously stated, vehicle delay (evaluated in terms of LOS) is no longer considered to be an environmental impact under CEQA. However, an evaluation of potential project effects on LOS is included herein for informational purposes only.

Minor improvements may be required to provide access to the project site. However, it is not anticipated that any such improvements would substantially interfere with existing roadway operations or circulation patterns. Additionally, through General Plan Circulation Element Amendments, the project proposes to remove future road reservations along section and mid-section lines where solar arrays are proposed and public streets would not be needed. These amendments would not affect any existing roadways or eliminate any access to existing land uses. None of these activities would result in conflict with an applicable plan, ordinance, or policy addressing the circulation system. The project does not propose any features that are inconsistent with applicable policies of the County's General Plan Circulation Element.

LOS was analyzed for year 2024 and year 2024 plus project construction scenarios. Existing traffic volumes were field-measured at the subject intersections in January 2020. As shown in Table 4.15-4, *Project Construction Peak-Hour Traffic Level of Service for Intersections*, local traffic at intersections is not projected to substantially change as a result of project construction. Out of the 13 studied intersections, only one intersection—southbound Wible Road and Bear Mountain Boulevard (SR-223)—would operate at LOS B as compared to current LOS A during the AM peak hour. Although a change from the existing LOS A to B constitutes a marginal increase in traffic, the target LOS for Kern County, as established by the Kern County General Plan Circulation Element, is LOS D or better.

TABLE 4.15-4: PROJECT CONSTRUCTION PEAK-HOUR TRAFFIC LEVEL OF SERVICE FOR INTERSECTIONS

Intersection	AM Peak Hour LOS (2024)	PM Peak Hour LOS (2024)	AM Peak Hour LOS (2024 plus Project)	PM Peak Hour LOS (2024 plus Project)
Old River Road and Bear Mountain Boulevard (SR-223)	A	B	A	B
Wible Road and Bear Mountain Boulevard (SR-223)	B (Northbound) B (Southbound)	B (Northbound) B (Southbound)	B (Northbound) B (Southbound)	B (Northbound) B (Southbound)
Costajo Road and Bear Mountain Boulevard (SR-223)	B	C	B	C
SR-99 Northbound On-/Off-Ramp and Bear Mountain Boulevard (SR-223)	C	C	C	C
Old River Road and I-5 Northbound Ramps	A	A	A	A
Old River Road and I-5 Southbound Ramps	A	A	A	A
Wible Road and Millux Road	—	A	—	A
Old River Road and Copus Road	A	A	A	A
I-5 Southbound On-/Off-Ramp and Copus Road	A	A	A	A
I-5 Northbound On-/Off-Ramp and Copus Road	A	A	A	A
SR-99 Southbound On-/Off-Ramp and Copus Road	A	A	A	A
Mettler Frontage Road and Copus Road	A	A	A	A
Mettler Frontage Road and SR-99 Northbound On-Ramp	A	A	A	A

SOURCE: Appendix L

LOS = level of service

Operation and Maintenance

As noted in Table 4.15-3, the proposed project is expected to generate 22 trips during the weekday AM and PM peak hours during operations. 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. Additionally, due to the low number of on-site employees, the project would not adversely affect any area transit, bicycle, or pedestrian facilities. Project operation and maintenance would not conflict with a program, plan, ordinance, or policy establishing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts would be less than significant.

Decommissioning

At the end of the project's operational term, the project operator may determine that the project should be decommissioned and deconstructed, which would adhere to the requirements of the appropriate governing

authorities and would occur in accordance with all applicable federal, state, and County regulations. Decommissioning impacts would be relatively similar to those identified for construction of the proposed project, and would be short-term and temporary. Thus, project decommissioning would not conflict with an applicable plan, ordinance, or policy establishing the circulation system, including transit, roadway, or bicycle and pedestrian facilities. Impacts would be less than significant.

Transit, Bicycle, and Pedestrian Facilities

There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways. Due to the rural nature of the project area, bicycle traffic is limited. The project is not located along an existing bus route, and few bus stops exist on the roadways likely to be used during construction and operation. The project would not house residents or employees and, therefore, would not have characteristics that could influence alternative means of transportation. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.15-2: The project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

CEQA Guidelines Section 15064.3(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. 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 TIA evaluated VMT based on applicable CEQA Guidelines for project construction, operation, and maintenance (Appendix L). This evaluation was based on methodology recommendations from OPR's 2018 Technical Advisory, including the following regarding vehicle type (OPR 2018):

> *Vehicle Types. Proposed (CEQA Guideline) Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks.*

The proposed project is not a land use or transportation project, and therefore neither Section 15064.3(b)(1) nor Section 15064.3(b)(2) of the CEQA Guidelines apply. Instead, the proposed project would be categorized under Section 15064.3(b)(3). The following paragraph from the CEQA Guidelines Section 15064.3(b)(3) provides guidance regarding qualitative analysis:

> *If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle*

miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

The CEQA Guidelines do not establish a significance threshold, but do recommend a threshold of significance for land use development (residential, office, and other land uses) and transportation projects. There is no significance threshold for construction or maintenance projects. The project would involve construction that would generate temporary construction-related traffic and nominal operations traffic; these would be categorized under Section 15064.3(b)(3), qualitative analysis. Section 15064.3(b)(3) recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type. For many projects, a qualitative analysis of construction traffic may be appropriate. The Technical Advisory also provides 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 less than significant transportation impacts (OPR 2018).

Project construction would be consistent with construction activities in terms of the temporary nature of activities, trip generation characteristics, and the types of vehicles and equipment required. Even though it is anticipated that some of the workers would carpool to the site, managing worker and vendor trip lengths is not feasible because of the remote location and duration of individual activities. Accessibility to alternative modes of transportation is also not available for workers. Per OPR, heavy vehicle traffic is not required to be included in the estimation of a project's VMT. Worker and vendor trips would generate VMT, but once construction (and decommissioning) is complete, construction-related traffic would cease and VMT would return to pre-construction conditions. Measures to reduce the VMT generated by workers and trucks are limited, and there are no thresholds or significance for temporary, construction-related VMT. Additionally, construction (and decommissioning)-related VMT would be temporary and short term. As noted above, OPR does not require quantitative assessment of temporary construction traffic. Therefore, the proposed project would not conflict or be inconsistent with CEQA Guidelines Sections 15064.3(b)(1) or Section 15064.3(b)(3), and impacts would be less than significant.

As shown in Tables 4.15-2 and 4.15-3, the number of daily passenger vehicle trips generated during project operation and maintenance (i.e., 12 daily trips) satisfies the small project screening threshold. Therefore, the project's operational impacts related to CEQA Guidelines Section 15064.3(b) would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be 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).

During construction, the project would require the delivery of heavy construction equipment and photovoltaic 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. Nevertheless, the use of oversize vehicles

during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space, which is considered a *potentially significant* impact.

The project would not include a design feature or use vehicles with incompatible uses that would create a hazard on the roadways surrounding the project site. The need for and number of California Highway Patrol escorts, as well as the timing of transport, would be at the discretion of Caltrans and the County, and would be detailed in respective oversize load permits. Thus, potential impacts would be *less than significant*.

Although impacts would be less than significant, Mitigation Measure (MM) 4.15-1 would require that all oversize vehicles used on public roadways during construction obtain required permits, obtain approval of a Construction Traffic Control Plan, and identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during AM and PM peak hours. This would ensure that construction-related oversize vehicle loads are in compliance with applicable California Vehicle Code sections and California Street and Highway Codes applicable to licensing, size, weight, load, and roadway encroachment of construction vehicles. Thus, impacts would be less than significant.

Mitigation Measures

MM 4.15-1: Prior to the issuance of construction or building permits, the project proponent/operator shall do the following:

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 address, at a minimum, the following issues:

   1. Timing of deliveries of heavy equipment and building materials.
   2. Directing construction traffic with a flag person.
   3. Placing temporary signing, lighting, and traffic control devices if required, including appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic.
   4. Ensuring access for emergency vehicles to the project site.
   5. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections.
   6. Maintaining access to adjacent property.
   7. Specifying construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hours.

b. Obtain all necessary encroachment permits for the work within road rights-of-way and use of oversized/overweight vehicles that will use County of Kern-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 the California Department of Transportation.

c. Enter into a secured agreement with the County of 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 the 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 County and non-County-maintained roads that demonstrably result from construction activities. The project proponent/operator shall submit a pre-construction 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 and inspection report to the County, in a format specified by the County. The County, in consultation with the project proponent/operator's engineer, shall determine project responsibility for the damage and the extent of remediation required, if any.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.15-4: The project would result in inadequate emergency access.

The project site is located in a rural area with primary access roads allowing adequate egress/ingress to the site in the event of an emergency. Additionally, as part of the project, on-site access roadways (internal to the sites) would be constructed. Therefore, development of the project would not physically interfere with emergency vehicle access or personnel evacuation from the site.

As described above, increased project-related traffic would not cause an increase in congestion and/or worsen the existing operating conditions on area roads; therefore, project-related traffic would not affect emergency access to the project site or any other surrounding location. The project would not require closures of public roads that could inhibit access by emergency vehicles. For these reasons, construction and operation would have a less than significant impact on emergency access.

Although impacts would be less than significant, MM 4.15-1 would provide further assurances for emergency access. MM 4.15-1 requires the preparation of a Construction Traffic Control Plan that considers access for emergency vehicles to the project site. During project operation, MM 4.15-1 requires the project operator to obtain County approval of all proposed access road designs prior to construction, further ensuring on-site emergency access is adequate.

Mitigation Measures

Implement Mitigation Measure MM 4.15-1.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Projects

The potential for cumulative transportation impacts exists where there are multiple projects proposed in an area that have an overlapping construction schedule and/or project operations that could affect similar transportation resources. Projects with overlapping construction schedules and/or operations could result in a substantial contribution to increased traffic throughout the surrounding roadway network, contribute to hazardous roadway conditions, and/or adversely affect emergency access or circulation. A cumulative impact related to transportation could therefore result if the project's incremental effects were combined with impacts of other past, present, or reasonably foreseeable future projects.

Cumulative effects to traffic volumes and LOS were assessed in the project's TIA; a list of cumulative (ongoing) projects in the vicinity of the project was provided to the TIA traffic engineers by the Kern County Planning Department (Appendix L). Based on the locations and types of projects provided in the cumulative projects list, resultant peak-hour intersection and roadway segment volumes were added to projected 2024 volumes to account for cumulative impacts. The TIA concluded that all intersection and roadway segments within the scope of the study would continue to operate at an acceptable LOS with the addition of cumulative construction traffic. As stated above in the evaluation of operational impacts, there would be minimal trip generation after construction activities have concluded. The project would result in less than significant cumulative impacts.

As described for Impact 4.15-1, the project is not anticipated to substantially conflict with circulation patterns or operations, including roadway, bicycle, transit, and pedestrian facilities, and would not present hazards or impede emergency access (Impact 4.15-4). However, implementation of MM 4.15-1 would ensure that the project's contribution to cumulative construction impacts in these regards would remain less than significant. It is anticipated that other cumulative projects would similarly be evaluated based on the existing setting (e.g., proximity to transit, pedestrian and bicycle facilities) and planned transportation systems to identify and reduce potential impacts, as appropriate.

According to OPR's Technical Advisory (OPR 2018), increased demand on transit systems throughout a region may cause a cumulative impact by requiring new or additional transit infrastructure. Such impacts may be adequately addressed through a fee program that allocates the cost of improvements not just to projects located near transit, but on a regional level for all projects that may impose a potential burden on the transportation system. The project would result in the construction of a solar photovoltaic facility and would not include the construction of new housing or the generation of new area population; the project would be operated by 11 full-time equivalent employees. It is therefore not anticipated that the project would create a significant new demand on existing transit facilities either locally or on a regional level, or contribute to a significant cumulative impact in this regard. Other cumulative projects would be evaluated based on the type of use proposed and existing setting to determine if conflicts with applicable plans, ordinances, or policies establishing the circulation system would occur.

Transportation impacts involving the project's VMT characteristics are long-term and cumulative in nature, because the objective of this consideration is to reduce total VMT as a way of reducing transportation sources of greenhouse gas emissions throughout a jurisdiction, region, or the state. It is reasonable to expect that because this project has a small and skilled workforce of 11 full-time equivalent employees that is likely to be composed of people who would commute similar distances as other skilled workers, the project would not result in circumstances where VMT patterns of the area or region would be significantly affected.

The same reasoning can be applied to all of the other proposed similar renewable energy projects considered in this cumulative impact analysis. Based on this assessment, cumulative impacts involving VMT patterns would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.15-1.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

4.16 Tribal Cultural Resources

4.16.1 Introduction

This section of the Environmental Impact Report (EIR) provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the Sandrini Solar Project (project). Cultural resources include places, objects, and settlements that reflect group or individual religious, archaeological, architectural, or paleontological activities. By statute, "tribal cultural resources" are generally described as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe, and are further defined in California Public Resources Code Section 21074(a)(1)(A)–(B). The analysis in this section is based on the results of the cultural resources technical report entitled, Class III Inventory/Phase I Survey, Sandrini Solar Farm Project, Kern County, California, and associated technical report addendum dated April 28, 2021, provided in Appendix E of this EIR, and results of the Native American consultation conducted by the County of Kern (County) for purposes of compliance with California Environmental Quality Act (CEQA) requirements prompted by Assembly Bill (AB) 52.

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 Correspondence and AB 52 Consultation

As part of the project's cultural resources report (Appendix E), a Sacred Lands File (SLF) search through the California Native American Heritage Commission (NAHC) was conducted. The NAHC maintains a confidential SLF that contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on June 3, 2021, to request a search of the SLF. The NAHC responded to the request in a letter dated June 24, 2021. The results of the SLF search conducted by the NAHC indicated that Native American cultural resources are not known to be located within or near the project site. The search yielded a tribal contact list to be used for AB 52 tribal consultation.

As part of the County's government-to-government responsibilities pursuant to AB 52, on June 3, 2021, 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. Similarly, as part of the County's government-to-government consultation responsibilities pursuant to Senate Bill (SB) 18, on June 25, 2021, the County sent outreach letters via certified mail to 11 California Native American tribal contacts identified by the NAHC. Results of the outreach are shown in Table 4.16-1, *Summary of Senate Bill 18 and Assembly Bill 52*

Consultation Efforts. To date, the County has received two responses, one from the San Manuel Band of Mission Indians (SMBMI) and one from the Santa Inez Band of Chumash Indians. In an email correspondence dated June 14, 2021, a representative of the San Manuel Band of Mission Indians (Ryan Nordness) acknowledged the delivery of the notice and stated, "The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates." In an email correspondence dated August 17, 2021, a representative of the Santa Ynez Band of Chumash Indians (Kelsie Merrick) acknowledged delivery of the notice and stated, "At this time, the Elders' Council requests no further consultation on this project; however, if supplementary literature reveals additional information, or if the scope of the work changes, we kindly ask to be notified" and that "If you decide to have the presence of a Native American monitor in place during ground disturbance to assure that any cultural items unearthed be identified as quickly as possible, please contact our office or Chumash of the project area." The correspondences are also summarized in Table 4.16-1.

TABLE 4.16-1: SUMMARY OF SENATE BILL 18 AND ASSEMBLY BILL 52 CONSULTATION EFFORTS

Contact(s)	Tribe/Organization Contacted	Consultation Type	Date Letter Mailed	Response Received
Robert Robinson, Chairperson	Kern Valley Indian Community	AB 52 SB 18	AB 52: 6/3/2021; SB 18: 6/25/2021	No response.
Jessica Mauck, Director-CRM Department	San Manuel Band of Mission Indians	AB 52	6/3/2021	In an email dated June 14, 2021, a representative of the San Manuel Band of Mission Indians (Ryan Nordness) acknowledged the delivery of the notice and stated, "The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates."
Michael Mirelez, Cultural Resources Coordinator	Torres Martinez Desert Cahuilla Indians	AB 52	6/3/2021	No response.
Anthony Madrigal Jr., Tribal Grants Administrator; Darrell Mike, Tribal Chairman	Twenty-Nine Palms Band of Mission Indians	AB 52	6/3/2021	No response.
Colin Rambo, CRM Tech; Octavio Escobedo III, Chairperson	Tejon Indian Tribe	AB 52 SB 18	AB 52: 6/3/2021; SB 18: 6/25/2021	No response.

TABLE 4.16-1: SUMMARY OF SENATE BILL 18 AND ASSEMBLY BILL 52 CONSULTATION EFFORTS

Contact(s)	Tribe/Organization Contacted	Consultation Type	Date Letter Mailed	Response Received
Sally Manning, Environmental Director; Danelle Gutierrez, THPO; James Rambeau, Sr., Chairperson	Big Pine Paiute Tribe of the Owens Valley	SB 18	6/25/2021	No response.
Kenneth Kahn, Chairperson	Santa Ynez Band of Chumash Indians	SB 18	6/25/2021	In an email dated August 17, 2021, a representative of the Santa Ynez Band of Chumash Indians (Kelsie Merrick) acknowledged delivery of the notice and stated, "At this time, the Elders' Council requests no further consultation on this project; however, if supplementary literature reveals additional information, or if the scope of the work changes, we kindly ask to be notified."
Mariza Sullivan, Chairperson	Coastal Band of the Chumash Nation	SB 18	6/25/2021	No response.
Neil Peyron, Chairperson	Tule River Indian Tribe	SB 18	6/25/2021	No response.
Delia Dominguez, Chairperson	Kitanemuk and Yowlumne Tejon Indians	SB 18	6/25/2021	No response.
Julio Quair, Chairperson	Chumash Council of Bakersfield	SB 18	6/25/2021	No response.

SB = Senate Bill; AB = Assembly Bill; THPO = Tribal Historic Preservation Officer

Nearby Historical Places

Historical maps that included the study area were consulted to identify potential historical structures or resources. With the exception of Block 2 and Block 5 of the study area as defined in the technical cultural resources report (see Appendix E), no structures appear in the vicinity of the study area on any historical U.S. Geological Survey (USGS) 1:24000 topographic quadrangles. No structures appear in Block 2 until the 1956 edition of the 1955 Coal Oil Canyon USGS 1:24000 topographic quadrangle, when the Lakeview Duck Club first appears within both the northeast quarter of Section 32 (T32S/R27E; MDBM) and the northwest quarter of Section 33 (T32S/R27E; MDBM). The 1970 and 1976 editions of the 1955 Coal Oil Canyon USGS 1:24000 topographic quadrangle indicate additional structures were present in the southwest quarter of Section 33 (T32S/R27E; MDBM) and the northeast quarter of Section 32 (T32S/R27E; MDBM). Structures first appear in Block 5 on the 1956 edition of the 1955 Mettler USGS 1:24000 topographic quadrangle along the east edge of the southwest quarter and the west edge of northwest quarter of Section

34 (T32S/R28E; MDBM). All structures are no longer present within the block on the 1995 edition of the 1992 Mettler USGS 1:24000 topographic quadrangle.

As described in Section 4.5, *Cultural Resources*, of this EIR, the records search conducted for the project identified no previously recorded historical resources within the project site. The records search was also extended to a 0.5-mile radius around the project site, which resulted in the recording of eight off-site resources within that radius. Those off-site resources are identified in Section 4.5, Table 4.5-3, *Resources within 0.5 Miles of the Study Area*, as a circular mound, elliptical mound, twined-bag fragments/burials, midden and scattered shell, lithe scatter, Rossini Farms Company Inc. Vineyard, and refuse scatter. A cultural resources pedestrian survey was also conducted within the project site, which resulted in the finding of two isolated artifacts: SANDRINI-ISO-1 (an isolated flake) and SANDRINI-ISO-2 (an isolated charm stone). Per the cultural resources report, neither of these resources are considered significant or unique historical resources under CEQA, they are not categorically eligible for National Register of Historic Places/California Register of Historical Resources listing, and they do not represent a significant or unique historical resource under CEQA (see Appendix E). These resources are further described in Section 4.5.

4.16.3 Regulatory Setting

Federal

There are no applicable federal regulations for tribal cultural resources.

State

Native American Heritage Commission

California Public Resources Code (PRC) Section 5097.91 established the 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. AB 52 amended 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 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) define 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 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 updates 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 that 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 the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 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 PRC 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 PRC 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 a Mitigated Negative Declaration (PRC Section 21082.3[d][2] and [3]).

PRC Section 21082.3(c)(1) states that any information, including the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process must 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 must 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 (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."

The purpose of involving tribes at the 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).

California Native American Graves Protection and Repatriation Act (NAGPRA) of 2001

Codified in California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection Act (NAGPRA) is consistent with the federal NAGPRA. It is intended to provide a seamless and consistent state policy to ensure that all California Native American remains and cultural items are treated with dignity and respect. The NAGPRA provides a mechanism for the return of remains and cultural items to lineal descendants. Section 8025 established a Repatriation Oversight Commission to oversee this process. The California NAGPRA also provides a process for non-federally recognized tribes to file claims with agencies and museums for repatriation of human remains and cultural items.

California Health and Safety Code, Sections 7050 and 7052

California 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.

Local

Construction of the solar facility would be subject to policies and regulations contained within general plans and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to tribal cultural resources. There are no policies, goals, and implementation measures in the Kern County General Plan related specifically to tribal cultural resources that are applicable to the project. The Kern County General Plan does contain policies, goals, and implementation measures that are generally relate to cultural resource preservation and development. These measures are not listed below, but are stated in this EIR in Section 4.5, *Cultural Resources*, Section 4.5.3, *Regulatory Setting*.

4.16.4 Impacts and Mitigation Measures

Methodology

The potential impacts to tribal cultural resources as a result of project implementation have been evaluated using a variety of resources, including an SLF search conducted by the NAHC. 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 CEQA Guidelines Appendix G, 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).

The SLF search conducted by the NAHC did not indicate the presence of tribal cultural resources within or immediately adjacent to the project site. Furthermore, the County's government-to-government consultation efforts with interested Native American groups conducted pursuant to AB 52 and SB 18 did not result in the identification of tribal cultural resources within the project site. However, the absence of specific site information does not necessarily indicate the absence of cultural resources in the project area, and unknown cultural or tribal cultural resources may be present.

In the event that subsurface tribal cultural resources are encountered during project construction through ground-disturbing activities (e.g., trenching, excavation, grading), significant impacts could occur.

However, implementation of Mitigation Measure (MM) 4.5-1 through MM 4.5-4, as provided in Section 4.5, *Cultural Resources*, of this EIR, would reduce potentially significant impacts to unanticipated tribal cultural resources. These mitigation measures would require cultural resources sensitivity training for construction workers, archaeological monitoring during construction, and appropriate treatment of unearthed resources during construction. Specifically, MM 4.5-3 would require any unknown archaeological materials encountered during the course of grading or construction be assessed by the lead archaeologist and any Native American representatives affiliated with the project vicinity. Monitoring would allow for discovery of unknown resources to be readily managed in accordance with federal and state law to prevent potential damage to or loss of such tribal cultural resources. These mitigation measures, which can be reviewed in full within Section 4.5, *Cultural Resources*, of this EIR, would reduce potential impacts to tribal cultural resources to a *less than significant* level.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-4 (see Section 4.5, *Cultural Resources*).

Level of Significance after Mitigation

Impacts would be less than significant.

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 noted above, no tribal cultural resources were identified through the SLF search conducted by the NAHC, nor as part of the County's government-to-government notification and consultation efforts with interested Native American groups conducted pursuant to AB 52 and SB 18. As described under the subheading *Existing Tribal Cultural Resources*, the cultural resource pedestrian survey conducted within the project site resulted in the finding of two isolated artifacts: SANDRINI-ISO-1 (an isolated flake) and SANDRINI-ISO-2 (an isolated charm stone). Per the cultural resources report, neither of these resources are considered significant or unique historical resources under CEQA, they are not categorically eligible for National Register of Historic Places/California Register of Historical Resources listing, and they do not represent a significant or unique historical resource under CEQA (Appendix E).

Given that no tribal cultural resources have been identified within or immediately adjacent to the project site, the project would not cause a substantial adverse change in the significance of a tribal cultural resource. Impacts would be less than significant. Implementation of MM 4.5-1 through MM 4.5-4, included in Section 4.5, *Cultural Resources*, of this EIR, would further reduce potential impacts to tribal cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-4 (see Section 4.5, *Cultural Resources*).

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The analysis of cumulative impacts takes into consideration the entirety of impacts that the proposed project, as 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 the southern San Joaquin Valley. This geographic scope of analysis is appropriate because the resources within this area are expected to be similar to those that may occur within the project site 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 proposed project on tribal cultural resources that may combine with similar effects caused by other projects, and provides a reasonable context wherein cumulative actions could be cumulatively considerable and affect tribal cultural resources.

Multiple projects are proposed throughout Kern County and the southern San Joaquin Valley, including solar facilities, agricultural trucking facilities, telecommunication infrastructure, and commercial development. Cumulative impacts to tribal cultural resources in the southern San Joaquin Valley could occur if other related projects, in conjunction with the proposed project, had or would have impacts on tribal cultural resources that, when considered together, would be *significant*.

Potential impacts of the proposed 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. However, as discussed above, no tribal cultural resources have been identified on the project site, and the project would not have a significant impact on tribal cultural resources. In the event that tribal cultural resources are discovered during project construction, these potential impacts would be mitigated to less-than-significant levels through implementation of MM 4.5-1 through MM 4.5-4. Additionally, cumulative projects would be required to undergo CEQA review and implement similar mitigation measures to mitigate for potentially significant impacts to tribal cultural resources. For these reasons, the proposed 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, the project would *not* have a cumulatively considerable contribution to impacts to tribal cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-4 (see Section 4.5, *Cultural Resources*).

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

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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 control, wastewater, and solid waste disposal, electricity, natural gas, and telecommunications). This section describes existing infrastructure and levels of service and evaluates whether any improvements would be necessary to accommodate the project. Information in this section is based primarily on the *Hydrology Study* prepared by QK (QK 2021) and the *Water Supply Assessment for the Sandrini Solar Park Project (Water Supply Assessment)* prepared by ICF (ICF 2021) provided in Appendix G and Appendix M of this EIR, respectively.

4.17.2 Environmental Setting

Water Supply

There are typically three sources of supply water: (1) natural sources; (2) human-created sources; and (3) reclamation. Natural sources include rivers, lakes, streams, and groundwater stored in aquifers. Human-created 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.

The project site is located in the south central portion of the San Joaquin Valley of Kern County within the boundaries of the Wheeler Ridge-Maricopa Water Storage District (WRMWSD) which is under a long-term contract with the regional wholesale agency, Kern County Water Agency (KCWA), for use of State Water Project (SWP) water. KCWA has a long-term contract with the California Department of Water Resources (DWR) to receive up to 982,730 acre-feet per year (afy). WRMWSD receives its water from KCWA, which can also receive non-SWP water deliveries to meet its demands.

The project site is currently used as agricultural land, which is either fallow or actively planted with annual row crops. Per the Agricultural Conversion Study prepared for the proposed project (Appendix B), portions of the project site that are under cultivation currently obtain water for the irrigation of crops either through private wells or a local water district. During non-drought years, irrigated agricultural production at the project site is feasible due to the surface water availability as well as the use of on-site wells, if necessary. During drought years, irrigated production may be limited due to limited surface water supplies; however, this may be offset by increasing private groundwater usage from existing wells operated by the applicable water district in order to supply adequate water services. Based on available data and history of ongoing

cultivation provided in the Agricultural Conversion Study, sufficient water is available to irrigate crops during drought and non-drought years (Appendix B).

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, as stated in the Agricultural Conversion and Forest Resources Study prepared for the project (Appendix B). The Kern Groundwater Authority Groundwater Sustainability Agency (GSA) was formed in order to comply with SGMA (DWR 2021). 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 (Kern Groundwater Authority GSA 2020).

The San Joaquin Valley is surrounded on the west by the Coast Ranges, on the south by the San Emigdio and Tehachapi Mountains, on the east by the Sierra Nevada, and on the north by the Sacramento-San Joaquin Delta and Sacramento Valley. The northern portion of the San Joaquin Valley drains toward the Delta by the San Joaquin River and its tributaries, the Fresno, Merced, Tuolumne, and Stanislaus Rivers. The southern portion of the valley is internally drained by the Kings, Kaweah, Tule, and Kern Rivers that flow into the Tulare drainage basin including the beds of the former Tulare, Buena Vista, and Kern Lakes (DWR 2006).

The Kern County Subbasin 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. Principal rivers and streams include Kern River and Poso Creek. Active faults include the Edison, Pond-Poso, and White Wolf faults. Average precipitation values range from 5 in. at the subbasin interior to 9 to 13 in. at the subbasin margins to the east, south, and west (DWR 2006).

The Kern County Subbasin is 1,782,320.81 acres in size, has approximately 6174 wells, of which approximately 437 are water supply wells. Groundwater accounts for approximately 80% of the basin's water supply (Groundwater Exchange 2021).

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.

Stormwater Drainage

As stated previously, the project site is agricultural land, which is either fallow or actively planted with annual row crops. Therefore, all stormwater drainage onsite follows natural drainage patterns on the land surface. The project site consists of two watersheds and their associated surface water sources, that feed into the Kern Lake Basin. The two surface sources feeding into Kern Lake Basin are San Emigdio Creek, located within Watershed A, to the southwest of the project site; and Tecuya Creek, located within

Watershed B, to the southeast of the project site. The velocities within the project site are anticipated to be 3 feet per second, or less.

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% 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. Although no solid waste is currently generated at the project site, the closest Class III municipal landfill is the Taft Recycling and Sanitary Landfill, which is located 20.5 miles northwest of the project site. The Taft Recycling and Sanitary Landfill has a remaining capacity of 7,380,708 cubic yards, with an anticipated closure date of December 31, 2076 (CalRecycle 2021d). The other nearby landfill is the Bakersfield Metropolitian (Bena) Sanitary Landfill, located approximately 24 miles northeast in Bakersfield, CA and the Lebec Transfer Station which is located approximately 24 miles southeast of the project site in Lebec, CA; however, it is anticipated to cease operation by June 2020. The location of the landfills expected to serve the project, their capacity, and their anticipated closure dates are presented in Table 4.17-1, *Summary of Kern County Public Works Landfills*.

TABLE 4.17-1: SUMMARY OF KERN COUNTY PUBLIC WORKS LANDFILLS

Landfill	Maximum Permitted Capacity	Remaining Capacity (cubic yards)	Maximum Permitted Throughput (tons/day)	Anticipated Year of Closure
Taft Recycling and Sanitary Landfill 13351 Elk Hills Road, Taft	11,000,000	7,380,708	800	2076
Bakersfield Metropolitan (Bena) SLF 2951 Neumarkel Road, Caliente	53,000,000	32,808,260	4,500	2046
Lebec Transfer Station 300 Landfill Road, Lebec	n/a	n/a	99	n/a

SOURCE: CalRecycle, 2021 a, b, d

Electricity, Natural Gas, and Telecommunications

No electricity, natural gas, nor telecommunications facilities are currently located on the project site. Pacific Gas & Electric Company (PG&E) provides electrical and natural gas service to the region and the project site (see Appendix F, Energy Utilization Analysis). No natural gas pipelines are located within 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 Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the 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

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' 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 (CalRecycle, 2019).

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 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.

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] 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% by 1995 and 50% 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 construction and demolition (C&D) debris.

Assembly Bill 341

Since the passage of AB 939, diversion rates in California have been reduced to approximately 65%, the statewide recycling rate is approximately 50%, and the beverage container recycling rate is approximately 80%. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75% of solid waste must be reduced, recycled, or composted by the year 2020. The State provided the following strategies to achieve that 75% 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% waste diversion on construction and some renovation projects, although this may be raised to 65% 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.

Senate Bills 610 and 221

Passed in 2001, Senate Bill (SB) 610 and SB 221 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 single and multiple dry years presented in five-year increments for a 20-year projection. In accordance with these measures, a Water Supply Assessment was prepared for the project as it is an industrial use of more than 40 acres (California Water Code Section 10912).

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.

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. However, the project is not expected to discharge waste into the local sewer system, and therefore, is not required to prepare and submit the described report.

Local

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 50% of construction & demolition waste; and
- Recycling or reuse of 100% of tree stumps, rocks and associated vegetation and soils resulting from land clearing.

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 County, 2015).

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 as stated in the Agricultural Conversion and Forest Resources Study prepared for the project (Appendix B). The Kern Groundwater Authority GSA was formed in order to comply with SGMA (DWR 2021). 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 Groundwater Authority 2020).

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% 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 (County of Kern, 2017).

Kern County General Plan

The policies and implementation measures in the Kern County General Plan related to utilities and service systems 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.

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

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 approval of any discretionary permit, the County shall make the finding, based on information provided by 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.

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.

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 were evaluated qualitatively and quantitatively using a variety of resources, including multiple online sources and published documents, as well as the *Hydrology Study for the Sandrini Solar Project in Kern County, California* (QK 2021) and the *Water Supply Assessment for the Sandrini Solar Park Project* (ICF 2021) provided in Appendix G and Appendix M of this EIR, respectively. The evaluation of impacts is based on professional judgment, analysis of the County's land use policies, and significance criteria established in CEQA Guidelines Appendix G, which the County has determined appropriate for the EIR.

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 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 sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;

d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals;

e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste;

Kern County determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts and therefore, are scoped out of this EIR. Refer to Appendix A of this EIR for a copy of the NOP/IS:

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;

The proposed project would not generate a significant amount of solid waste from construction or operation activities. Nonhazardous construction refuse and solid waste would be either collected and recycled per the construction waste management plan or disposed of at a local Class III landfill, while any hazardous waste

generated during construction would be disposed of at an approved off-site location. The closest Class III municipal landfill is the Taft Recycling and Sanitary Landfill, which is located 20.5 miles northwest of the project site. The Taft Recycling and Sanitary Landfill has a remaining capacity of 7,380,708 cubic yards, with an anticipated closure date of December 31, 2076 (CalRecycle 2011). Therefore, solid waste from the site would be transported to this landfill for disposal. It is not anticipated that the amount of solid waste generated by the proposed project would exceed the capacity of local landfills needed to accommodate the waste. Therefore, impacts would be less than significant, and no further analysis is required.

e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste;

The proposed project's construction, operation, and decommissioning phases would generate solid waste. The 1989 California Integrated Waste Management Act (AB 939) requires Kern County to attain specific waste diversion goals. In addition, 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 proposed project design. The proposed project would comply with the aforementioned regulations to reduce solid waste. Impacts are anticipated to be *less than significant*, and no further analysis is required.

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 project would require approximately 425 acre-feet (af) of water over a 12 month construction period for common construction related activities, including but not limited to soil conditioning, dust suppression, and fire water support. Minimal potable water supply would be required during construction, which would include water for drinking and for sanitation facilities, to be placed at each staging area. Additional facilities would be placed at specific construction locations, as necessary. A local sanitation company would provide and maintain appropriate constriction sanitation facilities. The primary proposed source of water for project construction is groundwater from a privately-owned groundwater well located adjacent to the project site in the Wheeler Ridge-Maricopa Water Storage District. In order to supply construction of the proposed project, the existing well would be equipped with a pump to provide water that would fill 5,000-gallon water trucks. Station water tanks would be located near the well, where water trucks would be filled and trucked throughout the project site. During construction and decommissioning, potable water for drinking and hand washing would be brought to the site by a bottled water service provider. For these reasons, project construction would not require or result in the construction of any new water facilities that could cause significant environmental effects and, thus, impacts during construction would be less than significant.

Wastewater Treatment

Construction of the project would generate a minimal volume of wastewater. During construction activity, wastewater would be contained within portable toilet facilities and disposed of at an approved disposal site. A

local sanitation company would provide and maintain appropriate constriction sanitation facilities. The Kern County Environmental Health Services Division is responsible for monitoring the use of portable toilet facilities, and a condition of approval would require the project proponent to provide documentation of a portable toilet pumping contract. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed for construction and, thus, impacts during construction would be less than significant.

Stormwater Drainage

As discussed in Section 4.17.2, *Environmental Setting*, stormwater drainage onsite follows the natural drainage patterns. The proposed project would result in a slight increase in imperviousness of the soils onsite due to minor grading and construction activities that would increase the compaction of existing soils. Construction would also result in minor vegetation removal, that would take place at areas where the concrete pads for the trackers would be placed, in areas of high local slope, and in areas where gravel roads would be constructed. In addition, various areas of the site would also be graded to prepare a smooth surface for inverter and battery energy storage system (BESS)-foundation placement. Water used during construction would runoff on the project site which, as previously mentioned, has no defined or constructed drainage facilities. However, as described in Section 4.10, *Hydrology and Water Quality*, of this EIR, Mitigation Measure (MM) 4.10-1 would require the implementation of a Stormwater Pollution Prevention Plan (SWPPP) during construction, which would include best management practices (BMPs) designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality. The project would also comply with the NPDES General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ), referred to as the "General Construction Permit." No offsite connections to a municipal storm water facility exist or are proposed; thus, the project would not require or result in the relocation or construction of new or expanded storm water drainage facilities, the construction or relocation of which could cause significant environmental effects. Impacts during construction would be less than significant.

Electric Power

No electrical facilities are located on the project site as the project site is currently used for agricultural facilities. Electricity is not expected to be consumed in large quantities during project construction, as construction equipment and vehicles are not electric (diesel- or gas-powered) and no electricity is expected to be consumed for water use during construction. As discussed under the subheading *Electricity, Natural Gas, and Telecommunication,* above, the project is located in PG&E's retail electric service territory. The project will interconnect at Pacific Gas & Electric's (PG&E) Wheeler Ridge Substation with 100 MW interconnecting at 70 kV and 200 MW interconnecting at 230 kV, which would provide electric power for construction and station power for operations to the site. In addition, temporary power for construction would be supplied by mobile diesel-driven generator sets, batteries, by temporary electrical service from a local provider, or a combination of all three methods. 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. During construction, temporary electric power for as-necessary lighting and electronic equipment, such as computers inside temporary construction trailers, would be provided by PG&E. The electricity used for such activities would be temporary, would be substantially less than that required for project operation. The project would not require or result in the relocation or construction of new or expanded electric facilities, and impacts would be less than significant.

Natural Gas

No natural gas pipelines are located on the project site, nor would natural gas be required for project construction. Therefore, relocation or construction of new or expanded natural gas facilities would not be required and no impacts would occur.

Telecommunications

No existing telecommunication facilities are located onsite. During construction, cellular or satellite communication technology may be used for both internet and telephone systems. However, if these facilities would be required, they would be constructed within the development footprint of the proposed project. Therefore, the project would not require relocation or construction of new or expanded telecommunication facilities, impacts would be less than significant.

Operation

Water

During project operations and maintenance (O&M), panel surfaces would be washed seasonally to increase average optical transmittance. Panel washing is expected to occur once per year, using water carried from existing wells by 5,000-gallon water trucks. The annual water consumption for O&M of the proposed project, including periodic panel washing, is expected to be approximately 2.5 afy. This equates to approximately 87.5 afy for the 35-year life of the project. The primary proposed source of water for project construction is groundwater from a privately-owned groundwater well located adjacent to the project site in the Wheeler Ridge-Maricopa Water Storage District or water transfers purchased via a municipal and industrial deal with the Wheeler-Ridge Maricopa Water Storage District, which acquires most of its water from KCWA. Other options include water transfers, other groundwater sources, reclaimed water, or water trucked from a nearby municipality. Because water demand associated with O&M of the proposed project is low, water could be trucked to the project site, allowing water-source flexibility. Per the Water Supply Assessment prepared for the proposed project (Appendix M), long-term water demand associated with the proposed project would be relatively minor and could be met by KCWA's available surface water sources under normal conditions and groundwater pumping under all-water year types, including normal, single-dry, and multiple-dry years (see discussion under Impact 4.17-2, below). Therefore, the proposed project's water demand would not significantly impact KCWA's water supplies or deplete long-term groundwater supplies. In addition, implementation of SGMA would create reliable groundwater supply that would not depend on water year type and would likely restrict groundwater pumping. However, because the project's water demand is so low, and because the project has access to existing wells, the project is expected to be able to secure access to a reliable water supply. For these reasons, the project would not require or result in the construction of new water facilities which could cause significant environmental effects and, thus, impacts during O&M would be less than significant.

Wastewater Treatment

During operation, wastewater generated would potentially be disposed of to a septic tank or through connection to a local sewer line. The proposed project operations would have 11 full-time equivalent employees; thus, the proposed project operation would not generate a substantial amount of wastewater that would require or result in the relocation or construction of new or expanded municipal wastewater facilities. Therefore, impacts would be less than significant.

Stormwater Drainage

There are currently no constructed stormwater drainage systems present onsite. Therefore, all stormwater drainage onsite follows natural drainage patterns on the land surface. Rainwater that falls onto the proposed PV panels would drain freely into the ground. Panels would slope and rainwater would runoff the lower edge. Although the project would result in a slighting increase in impervious surfaces, the majority of exiting vegetation and crops present on-site would be left in their existing conditions in order to assist in erosion control and maintain the existing soil characteristics, including infiltration rates. Further, the addition of the inverter foundations would create a very slight increase in impervious areas onsite; however, these foundations would be small and would be distributed throughout the site.

As discussed under Impact 4.17-1, above, the County requires that any increase in surface runoff is retained onsite. The increase in runoff is contingent the final site layout and locations of inverters and proposed BESS. As was previously mentioned, the PV panels would be placed above the existing ground, allowing infiltration to occur beneath each panel. As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, MM 4.10-3 would be implemented and would require preparation of a drainage plan to reduce potential increases in stormwater runoff onsite. The drainage plan would detail any necessary physical structures required to control stormwater. These structures would be developed onsite along with the rest of project construction. No offsite disposal connections to a municipal stormwater facility exist or are proposed. Thus, the proposed project would not require or result in the relocation or construction of new or expanded storm water drainage outside of stormwater drainage constructed on-site to serve the project. The construction or relocation these components would not result in significant environmental effect impacts during operation and maintenance; impacts would be less than significant.

Electric Power

Project operation would generate 300 MW of renewable electrical energy that would help reduce or offset electricity on the state-wide utility grid. As described in Section 3.7.3, *Operation and Maintenance,* the proposed project would require power for the O&M facilities, electrical enclosures, tracker motors, associated structures, and for plant lighting and security. As described in Section 4.6, *Energy*, of this DEIR, operation of the project would consume 74,407 kilowatt-hours (kWh) per year of electricity, which is approximately 0.0001% of electricity were used in PG&E's service area in 2019 (approximately 78 billion kWh). In addition, as the project is a 300 MW solar photovoltaic energy producer, it is estimated that it will generate 603,206,912 kWh per year as provided in the Energy Utilization Report prepared for the project (Appendix F), which more than offsets the energy consumed annually to operate the project. Therefore, relocation or construction of new or expanded electrical facilities would not be required during operation and impacts would be less than significant.

Natural Gas

The Project would consume approximately 108,480 Kilo British Thermal Units (kBTU) per year. This amount of natural gas is equivalent to 1,085 therms. For disclosure, in 2019, PG&E delivered approximately 4.9 billion therms to the region. Therefore, the proposed project would consume a minimal amount of natural gas compared to the total natural gas delivered by PG&E. Therefore, relocation or construction of new or expanded natural gas facilities would not be required during operation and impacts would be less than significant.

Telecommunications Facilities

During operations, on-site telecommunication facilities may be installed to facilitate collection and transmission of meteorological data and data regarding solar arrays. These telecommunication facilities would be constructed within the area to be developed under the proposed project and no off-site improvements are proposed. Therefore, the proposed project would not otherwise generate the demand for or require or result in the relocation or construction of new or expanded off-site telecommunications facilities that would, in turn, result in a significant impact to the environment. Therefore, potential impacts of the installation of these telecommunication facilities would be less than significant.

Mitigation Measures

Implementation of MM 4.10-1 and MM 4.10-3 outlined in Section 4.10, *Hydrology and Water Quality*, and MM 4.7-4 outlined in Section 4.7, *Geology and Soils*, would be required.

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.

Water requirements for the project during construction and operation were determined in the *Water Supply Assessment* prepared for the project (Appendix M). The project's construction water demand is estimated to be 425 af for a 12 month construction period and approximately 2.5 afy for the operational life of the project (approximately 35 years). The water quantity required during decommissioning is unknown at present but is anticipated to be similar to construction water demands and, similar to construction, would be a temporary use. There are currently no sources of piped potable water at or near the project site. Because solar panels are susceptible to damage and become inefficient with the use of poor-quality water, the purchase of high-quality water or the process of filtering water onsite may be necessary.

As discussed under Impact 4.17-3, above, the primary proposed source of water for project construction and operations is groundwater from a privately-owned groundwater well located adjacent to the project site in the Wheeler Ridge-Maricopa Water Storage District. As discussed in the Water Supply Assessment, groundwater quality for the wells located on the project site would be adequate for project construction and operational use, including panel cleaning. During operations, the primary proposed sources of water for project operations are the same well used for construction water, located adjacent to the project site, or water transfers purchased via a Municipal and Industrial (M&I) deal with Wheeler Ridge-Maricopa Water Storage District (WRMWSD), which receives water from KCWA.

Water demands within the project region are serviced by a variety of water purveyors, including the large wholesale agency, KCWA and its member districts (for agricultural and M&I use), irrigation districts, investor-owned water companies, mutual water companies, municipalities and private well owners. Water supplies utilized in the region are received by the SWP, via the California Aqueduct; the Central Valley Project (CVP), via the Friant-Kern Canal; and local surface supplies from the Kern River and other local streams, as well as groundwater from the San Joaquin Valley groundwater basin. Agriculture, M&I users, and groundwater banking operations all draw upon local groundwater resources, with agriculture estimated to be the largest user of groundwater. However, because the majority of groundwater extractions in the

region are not recorded, obtaining an accurate assessment of groundwater extractions in the region is difficult. However, groundwater levels are monitored to protect and sustain the groundwater basin.

KCWA's projected water demand and supply, during normal, single dry, and multiple dry years is presented in Table 4.17-2, *Projected KCWA Water Supply and Demand Over a Normal Year, Single Dry Year, and a Multiple Dry Year Period*. As shown in Table 4.17-2, KCWA estimates there would be no difficulty in meeting its projected water demands under normal conditions through 2040. However, under single dry years or multiple dry year scenarios, predicted water demand data was not available. Although water conservation measures could be practiced during single dry years and multiple dry years, for the purposes of the analysis performed in the Water Supply Assessment, it was assumed demands would stay the same as for normal water years. Conservatively, considering the smallest projected surplus of 356,196 af (during a normal year, 2040 projection), the water demand of approximately 118 af over the 35-year life of the proposed project (30 af for a 12-month construction period and approximately 87.5 afy for the operational life of the project) represents approximately 0.03% of the projected 1-year surplus.

Table 4.17-3, *Water Supply for the Proposed Project*, provides a comparison for the available supply for the construction and O&M for normal, single-dry, and multiple-dry years of the proposed project to water availability. Based on identified water supply sources, as well as the potential volume of water the project could obtain from each source, sufficient water supply is available to meet the proposed project's construction and O&M demands under normal year conditions. However, projected water demand in single and multiple dry years was not available; however, if demand is not reduced during dry years, water provided by KCWA would not be enough to meet full reginal demand. During these periods of shortage, water demand for the region and the proposed project would be met by groundwater. Because increasing solar projects is a priority for stakeholders in Kern County, within the WRMWSD, water management strategies for solar power generation projects include conjunctive management and groundwater storage. An active groundwater well is present adjacent to the project site; therefore, groundwater is a potential source of project water. Per the Water Supply Assessment prepared for the project, a water rights/pumping purchase agreement with a private groundwater well landowner would cover O&M water usage. Because the privately-owned groundwater wells proposed as water supply for the project are located in the Kern County Subbasin, the Kern County Subbasin water budget incorporated groundwater from the privately-owned well. The project would draw water supply from an existing privately-owned water-right; therefore, the volume of water used for the project has been incorporated into KCWA's and regional groundwater supply and demand. To supply water for construction and O&M of the project, the well would be equipped with a pump to provide water that would fill 5,000-gallon water trucks. Station water tanks would be located near the well, where water trucks would be filled and trucked throughout the project site. Therefore, through supplies provided by KCWA as well as local groundwater sources, adequate water supplies for the construction and annual O&M demand are likely to be available through 2040 under all water year types.

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TABLE 4.17-2: PROJECTED KCWA WATER SUPPLY AND DEMAND OVER A NORMAL YEAR, SINGLE DRY YEAR, AND A MULTIPLE DRY YEAR PERIOD

	Normal Year					Single-Dry Year[1]					Multiple-Dry Year[1]				
	2020	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**	**2020**	**2025**	**2030**	**2035**	**2040**
Supplies (af)															
State Water Project	611,258	611,258	611,258	611,258	611,258	78,618	78,618	78,618	78,618	78,618	334,128	334,128	334,128	334,128	334,128
Groundwater[2]	116,000	216,000	343,000	361,000	611,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total KCWA Supply	611,258	611,258	611,258	611,258	611,258	78,618	78,618	78,618	78,618	78,618	334,128	334,128	334,128	334,128	334,128
Demand (af)															
Potable Water[3]	169,497	217,661	235,674	255,062	274,4504	169,497	217,661	235,674	255,062	274,450	169,497	217,661	235,674	255,062	274,450
Difference	557,761	609,597	718,584	717,196	758,808	-90,879	-139,043	-157,056	-176,444	-195,832	164,631	116,467	98,454	79,066	59,678

SOURCE: Appendix M

State Water Project Table A of Appendix M water supplies assumes Table A contract amount of 982,730 AFY

1 Although water conservation measures could be practiced during single dry years and multiple dry years, as a conservative approach and because projected water demand in single and multiple dry years was not available, water demand was assumed to remain the same with each water year type.

2 Some management actions within the Kern County groundwater subbasin are implemented gradually over many years, with savings increasing each year over the implementation period. However, some management actions are implemented only in certain years (i.e. in wet years). The anticipated average-annual water supply benefit of the proposed SGMA projects and management actions steadily increases over the 20-year period from WY2021 to WY2040 to represent the implementation of the Kern County Subbasin GSPs. Groundwater supplies including the privately-owned groundwater wells proposed as water supply for the project are in the Kern County Subbasin, and where included in the Kern County Subbasin water budget.

3 Includes all Kern County Subregions

4 Projected urban water demands were taken from UWMPs developed by the local agencies. Not all UWMPs estimated water demand through 2040, therefore total water demand for 2040 did not include all KCWA water demand in 2040. As a result, water Demand in 2040 was calculated based on the increased water demand projected between 2030 and 2035.

AF = acre-feet; NA = Not Available

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TABLE 4.17-3: WATER SUPPLY FOR THE PROPOSED PROJECT

	Construction (2022 – 2023)			Operations and Maintenance (2023 -2040)		
Available Sources	**Normal Water Year**	**Single Dry Year**	**Multiple Dry Year**	**Normal Water Year**	**Single Dry Year**	**Multiple Dry Year**
Projected Available Supply (af)						
Excess KCWA[a]	557,761[b]	-90,879	164,631	758,808[c]	-195,832[c]	59,678[c]
Projected Demand (af)						
Proposed Project	425	425	425	2.5	2.5	2.5
Available Supply Minus Demand						
KCWA	557,336	-91,304	164,206	758,806	-195,835	59,676

SOURCE: Appendix M

[a] The available production from Well 1 (approximately 1,240 AFY from the private well proposed as a source for Project construction and operation water supply) is incorporated into KCWA's supply calculation for normal, single dry, and multiple dry years.

[b] For the construction period between 2022 and 2023, normal, single dry, and multiple dry years projected remaining available supply values are the 2020 projections calculated in Table 4.17-2.

[c] For the O&M period between 2023 and 2040, projected available supply values are the lowest projected surplus in the 2020–2040 period evaluated in the 2020 Kern IRWMP, which are the values projected for 2040.

AF = acre-feet; KCWA = Kern County Water Agency; IRWMP = Integrated Regional Water Management Plans

Therefore, for the reasons outlined above, the project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years, and impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.17-3: The project would result in a determination by the wastewater 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. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed for operations. Wastewater generated by the project would be disposed of by a contractor at an approved offsite location. Therefore, wastewater generated would be negligible and would not exceed wastewater treatment capacity of any treatment providers. Impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Past, present, or reasonably foreseeable future projects located within a 6-mile radius of the project are listed in Table 3-4 in Chapter 3, *Project Description*, of this EIR. The geographic scope for impacts to utilities and service systems includes projects within the service area for each of the utility providers described above, which includes demands on water supply, wastewater, and stormwater drainage. The scope for impacts to water and wastewater includes projects within the KCWA service area. The scope for impacts to stormwater drainage and solid waste disposal includes projects that rely on the same infrastructure and solid waste disposal facilities. 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 would result in a significant cumulative effect.

Water Supply

As described under Impact 4.17-2, the project would need minimal water supply during construction, operation, and decommissioning. Therefore, through supplies provided by KCWA as well as local groundwater sources, adequate water supplies for the construction and annual O&M demand are likely to be available through 2040 under all water year types. Therefore, there should be sufficient supply to meet the cumulative demand and the project's contribution would not be cumulatively considerable.

Wastewater

As discussed under Impact 4.17-3, above, the proposed project would not adversely impact existing wastewater treatment facilities, and impacts would be less than significant. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. During operations, employees would utilize restroom amenities, to be constructed in the proposed O&M building on-site. Therefore, the project would not substantially contribute to a cumulative impact on regional wastewater treatment facilities or capacity.

Stormwater Drainage

As discussed under Impact 4.17-1, above, with implementation of MM 4.10-1, which requires the implementation of an SWPPP during construction, and MM 4.10-3, which requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite, impacts to stormwater drainage associated with the proposed project would be less than significant. Surrounding projects would also be required to prepare a drainage plan in accordance with Kern County Development Standards and Kern County Code of Building Regulations, that would help avoid substantial increases of stormwater generated onsite by their proposed ground disturbance; depending on the findings of their drainage plan, these projects may need to construct stormwater control structures onsite to reduce the potential for increased stormwater runoff. Additionally, as with the project, all projects that would not retain all runoff onsite would be required

to prepare a SWPPP, per MM 4.10-1, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Therefore, the project would not contribute to cumulatively considerable impacts related to stormwater drainage facilities.

Electricity

The project would include construction of a gen-tie that would tie into existing facilities and provide renewable electrical energy and energy storage capacity to the state-wide utility grid. Electricity demand of the project would be minimal during construction and operations and would be provided by the onsite PV and battery system and the commercial grid, as needed. The project is located in PG&E's service territory. The project will interconnect at PG&E's Wheeler Ridge Substation to provide electric power for construction and station power for operations. This project, as an energy producing facility, would also serve 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 does not include the relocation of existing natural gas facilities on the project site and natural gas would not be required for operation of the project. 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.

Mitigation Measures

Implementation of MM 4.10-1 and MM 4.10-3 outlined in Section 4.10, *Hydrology and Water Quality*, as well as MM 4.9-1 outlined in Section 4.9, *Hazards and Hazardous Materials*, would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

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4.18 Wildfire

4.18.1 Introduction

This section evaluates the impacts related to wildfire hazards resulting from construction, operation and maintenance, and decommissioning of the proposed project. This section describes applicable regulations and existing conditions that influence risks associated with wildfire, identifies the criteria used to determine the significance of environmental impacts, and describes the proposed project's potential impacts related to wildfire. The analysis in this section is based on review of the project plans, information from the California Department of Forestry and Fire Protection (CAL FIRE), and CAL FIRE Kern County Fire Hazards Severity Zone (FHSZ) Maps, vegetation data from the project's *Biological Analysis Report* provided in Appendix D (QK 2021), the project's *Revised Preliminary Soil and Geological Evaluation* provided in Appendix K (BSK Associates 2020), and project location maps.

4.18.2 Environmental Setting

Site Characteristics and Fire Environment

Fire Hazard Areas/State Responsibility Area

The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for mapping fire hazard areas throughout the state and provides these maps through the Fire and Resource Assessment Program (FRAP) database. As depicted in these maps, wildfire suppression and prevention responsibility is geographically divided by Federal, State, and Local Responsibility Areas and further categorized into Fire Hazard Severity Zones (FHSZs), which are ranked as Moderate, High, and Very High. FHSZs are determined by a region's land cover, vegetation, terrain, climate, fire history, and several other factors that contribute to the fire environment. This information is provided to the public and local agencies to incorporate the fire hazard mapping into local planning efforts. According to the CAL FIRE mapping data (CAL FIRE 2021a), the proposed project is located entirely within a Local Responsibility Area as shown in Figure 4.18-1, *Fire Hazard Severity Zones for Local Responsibility Areas.* The nearest area mapped as State Responsibility Area is approximately 4 miles to the south (Figure 4.18-2, *Fire Hazard Severity Zones for State Responsibility Areas*). Additionally, the proposed project site is not located within any state or local FHSZ (CAL FIRE 2021b). 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. The nearest FHSZ (Moderate) is approximately 4.5 miles south of the proposed project site in the Plieto Hills and Wheeler Ridge area. In addition, the Kern County Fire Department (KCFD) Wildland Fire Management Plan designates a proposed project site as being located within an Agriculture/Non-Wildland area (KCFD 2009).

Slope/Terrain

Terrain influences fire hazard by affecting fire spread rates. Typically, steep terrain results in faster fire spread up slope and slower spread down slope. Terrain features that form a funneling effect—such as chimneys, chutes, or saddles—on the landscape can result in especially intense fire behavior, including faster spread and higher intensity. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven by vegetation and wind. The proposed project site is located on the valley bottom on existing agricultural land. The proposped project site slopes very gently to the northeast, with slope gradients measuring less than 1 percent. Elevations on the site range from approximately 440 feet in the southwest to 320 feet in the northeast.

Climate/Weather

The proposed project is located within the San Joaquin Valley Air Basin and is considered to be within a Mediterranean climate area. The climate is characterized by sparse rainfall that occurs in winter with hot dry summers. Winds typically blow from the northwest on the project site with a moderate wind speed of 7 miles per hour (Weather Underground 2021). Air temperature in the winter ranges from an average of low to mid-40s °F and in the summer averages between 90°F to 100°F (WRCC 2021).

Fire History

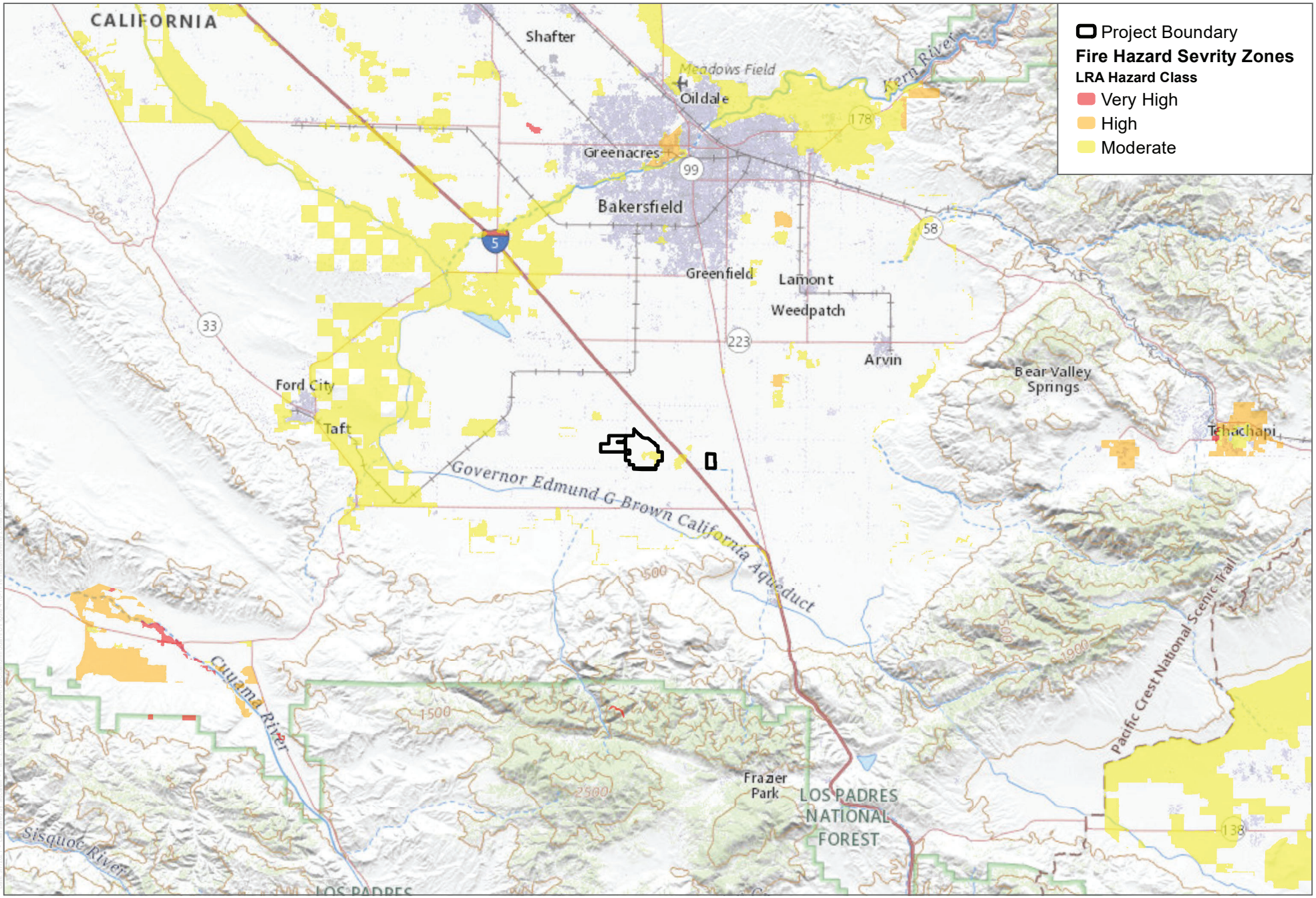
Fire history is an important component of fire planning and can provide an understanding of fire frequency, fire type and behavior, most vulnerable areas, and significant ignition sources, amongst others. Fire history represented in this section uses CAL FIRE's Fire and Resource Assessment Program (FRAP) database (CAL FIRE, 2021c), which includes fires dating to the late 1800s, but only includes those over 10 acres in size. Based on a review of these data sets, no fires have burned on the proposed project site; however, fires have occurred in the project vicinity and in the region. The 2008 Copus Fire burned approximately 32 acres along the north side of Copus Road approximately 1.5 miles east of Sites 3 and 5. The 2014, Copus Fire burned approximately 12 acres south of Copus Road approximately 1.25 miles east of the Sites 3 and 5. Neither fire had known causes. Larger fires have occurred approximately 4 miles to the south of the proposed project, associated with the steeper terrain and annual grassland present in the Plieto Hills and Wheeler Ridge area.

Vegetation/Land Cover and Surrounding Land Uses

Vegetation communities on the proposed project site are further detailed in Section 4.4, *Biological Resources*, and generally consist of agricultural cropland (currently fallow or actively planted with annual row crops). Existing land uses surrounding the project site consist largely of agricultural parcels sparsely occupied by farm or rural residential uses.

Fire Protection Facilities and Services

The project site is located in the jurisdictional response area of the Kern County Fire Department (KCFD). KCFD provides fire protection services to an area of over 8,000 sq. miles with 46 fire stations located throughout Kern County. KCFD also has 14 mutual aid agreements with neighboring fire suppression organizations. Fire Station 55 is the closest responding station to the project site, approximately 13 miles southeast at 5441 Dennis McCarthy Drive, Lebec, California 93243 (KCFD 2020). A detailed discussion of fire protection facilities and services related to the proposed project is included in Section 4.14, *Public Services*.



SOURCE: USGS National Map 2021; FRAP

DUDEK

0 21,000 42,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 4.18-1

Fire Hazard Severity Zones for Local Responsibility Areas

Kern County Planning and Natural Resources Department
Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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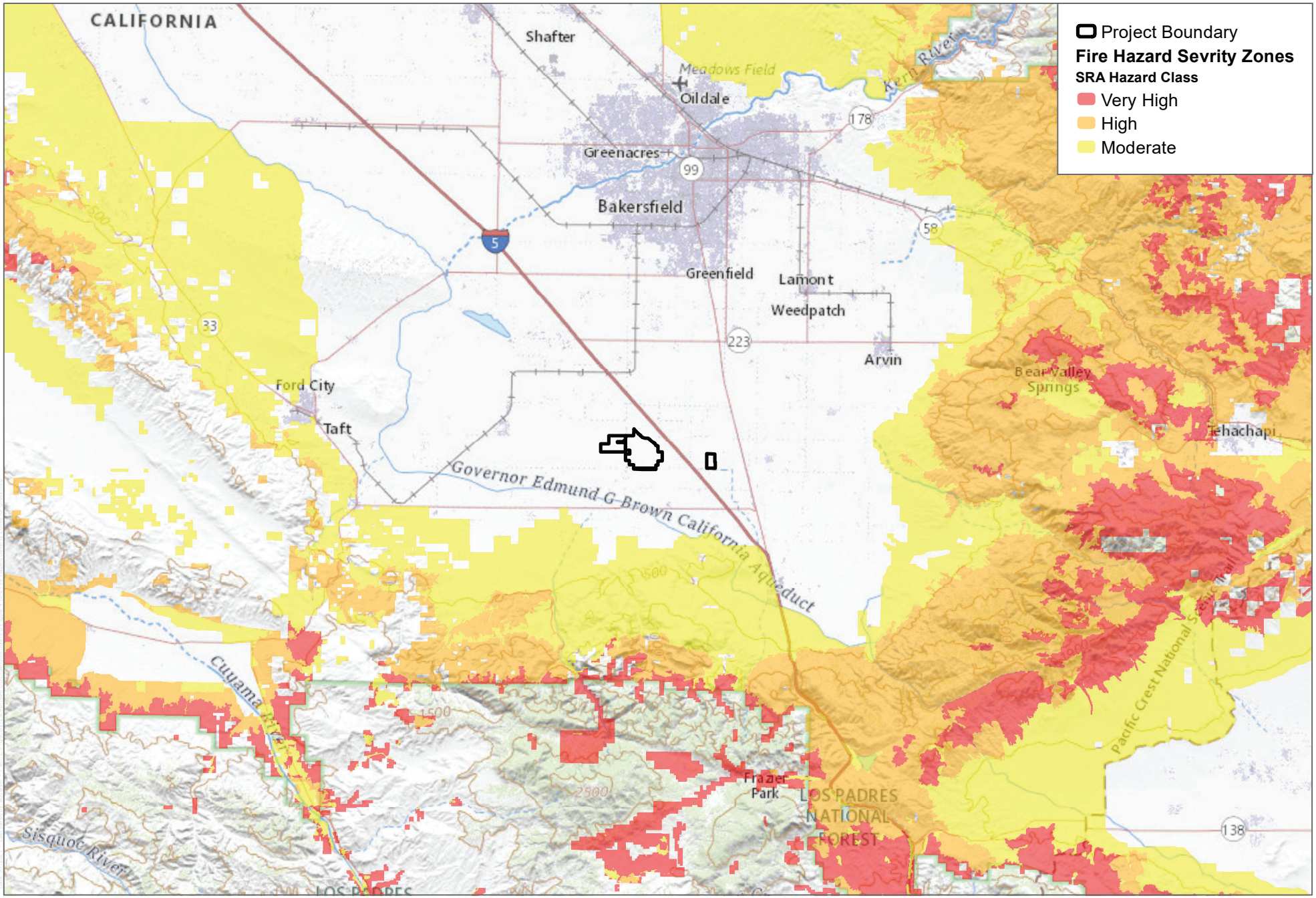

SOURCE: USGS National Map 2021; FRAP

DUDEK

0 21,000 42,000 Feet

Case Numbers:

Conditional Use Permit No. 9, Map No. 159
Conditional Use Permit No. 27, Map No. 160
Conditional Use Permit No. 28, Map No. 160
Conditional Use Permit No. 29, Map No. 160
Conditional Use Permit No. 27, Map No. 161
General Plan Amendment No. 2, Map No. 159
General Plan Amendment No. 3, Map No. 160
General Plan Amendment No. 4, Map No. 161
Williamson Act Land Use Cancellations

FIGURE 4.18-2

Fire Hazard Severity Zones for State Responsibility Areas

Kern County Planning and Natural Resources Department

Sandrini Solar Project ■ By: EDP Renewables North America, LLC

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4.18.3 Regulatory Setting

Federal

National Fire Plan

The Department of the Interior's National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts to rural communities, and ensure sufficient firefighting capacity in the future. The plan addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. The Rural Fire Assistance program is funded to enhance the fire protection capabilities of rural fire districts and safe and effective fire suppression in the wildland/urban interface. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, equipment purchase, and prevention activities on a cost-shared basis.

North American Electric Reliability Corporation Reliability Standards

In compliance with Section 215 of the Federal Power Act, North American Electric Reliability Corporation developed mandatory and enforceable reliability standards such as emergency preparedness and operations; facilities design, connections, and maintenance; personnel performance, training, and qualifications; and protection and control. These standards would ensure reliable energy production, as well as safe operation and maintenance practices.

Federal Energy Regulatory Commission Standards

The Federal Energy Regulatory Commission requires utilities to adopt and maintain minimum clearance standards between vegetation and transmission voltage power lines. These clearances vary depending on voltage. In most cases, the minimum clearances required in state regulations are greater than the federal requirement. In California for example, the state has adopted General Order 95 rather than the North American Electric Reliability Corporation Standards as the electric safety standard for the state. Federal Energy Regulatory Commission standards are not discussed further.

National Electric Safety Code 2017

The National Electric Safety Code covers basic provisions related to electric supply stations, overhead electric supply and communication lines, and underground electric supply and communication lines. The code also contains work rules for construction, maintenance, and operational activities associated with electric supply and communication lines and equipment. The code, which must be adopted by states on an individual basis, is not applicable in the State of California. As stated previously, the State of California has adopted its own standard (General Order 95) rather than a general national standard. The National Electric Safety Code is not discussed further.

Institute of Electrical and Electronics Engineers Standards 516-2009

The Institute of Electrical and Electronics Engineers is a leading authority in setting standards for the electric power industry. Standard 516-2009, Guide for Maintenance Methods on Energized Power Lines, establishes minimum vegetation-to-conductor clearances in order to maintain electrical integrity of the electrical system.

National Fire Protection Association (NFPA) Codes, Standards, and Guides

National Fire Protection Association (NFPA) codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. NFPA standards are recommended guidelines and nationally accepted good practices in fire protection, but are not laws or codes unless adopted as such or referenced as such by the California Fire Code or the local fire agency.

International Fire Code

Created by the International Code Council, the International Fire Code (IFC) addresses a wide array of conditions hazardous to life and property, including fire, explosions, and hazardous materials handling or usage (although not a federal regulation, but rather the product of the International Code Council). The IFC places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the IFC uses a hazards classification system to determine the appropriate measures to be incorporated to protect life and property (often times these measures include construction standards and specialized equipment). The IFC uses a permit system (based on hazard classification) to ensure that required measures are instituted.

State

California Department of Forestry and Fire Protection (CAL FIRE)

California Fire Plan. The 2018 Strategic California Fire Plan directs each California Department of Forestry and Fire Protection (CAL FIRE) Unit to prepare a locally specific Fire Management Plan. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment, as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

California Public Utilities Commission (CPUC) General Order No. 95. CPUC General Order No. 95 formulates for the State of California requirements for overhead line design, construction, and maintenance, the application of which will ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

Assembly Bill (AB) 1054. Assembly Bill 1054 provides for a Wildfire Fund, which electrical corporations may access upon meeting specific requirements. Electrical corporations must opt into the fund, make financial commitments, and maintain a safety certificate from the CPUC, among other conditions. In July 2019, Southern California Edison (SCE) opted into the Wildfire Fund, which requires it to satisfy a burden of proof test and obtain a safety certification by satisfying the conditions of Public Utilities Code Section 8389(e)(1-7).

Public Utilities Code Section 8389(e)(1-7). This section specifies the requirements for an electrical corporation to obtain a safety certification by documenting the following: an approved wildfire mitigation plan, good standing, an established safety committee composed of members with relevant safety experience, an executive incentive compensation structure to promote safety as a priority, an established

board-of-director-level reporting to the commission on safety issues, a compensation structure for new or amended contracts for executive officers, and implementation of its approved wildfire mitigation plan.

California Fire Code 2019 Section 1206. California Fire Code 2019 Section 1206 outlines requirements for energy storage systems designed to provide electrical power to a building or facility. Permits shall be obtained prior to the installation and operation of energy storage systems, and construction documents shall provide information related to fire safety, such as the location and layout of the room in which the stationary storage battery system is to be installed; details on hourly fire-resistance-rated assemblies provided; quantities and types of storage batteries and battery systems; manufacturer's specifications, ratings, and listings of storage batteries/systems; details on energy management systems; location and content of signage; details on fire-extinguishing, smoke detection, and ventilation systems; and rack storage arrangement, including seismic support criteria. Additionally, this section establishes standards for the design of stationary storage battery systems, arrays, and signage to enhance fire safety and detect and extinguish fires.

California Public Resources Code, Sections 4294 and 4293. These sections specify requirements related to fire protection and prevention in transmission line corridors. California Public Resources Code, Section 4292, states that any person that owns, controls, operates, or maintains any electrical transmission or distribution line has primary responsibility for fire protection of such areas, and shall maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower. California Public Resources Code, Section 4293, states that any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass covered land which has primary responsibility for the fire protection of such area, shall maintain a clearance of the respective distances.

California Public Resources Code, Section 4292. This section requires that a minimum firebreak of 10 feet in all directions from the outer circumference of a pole or tower be established around any pole that supports a switch, transformer, lightning arrester, line junction, or end or corner pole. All vegetation shall be cleared within the firebreak.

California Public Resources Code, Section 4293. This section establishes the minimum vegetation clearance distances (between vegetation and energized conductors) required for overhead transmission line construction. Minimum clearances are discussed as follows:

- A minimum radial clearance of 4 feet shall be established for any conductor of a line operating at 2,400 or more volts but less than 72,000 volts.
- A minimum radial clearance of 6 feet shall be established for any conductor of a line operating at 72,000 or more volts but less than 110,000 volts.
- A minimum radial clearance of 10 feet shall be established for any conductor of a line operating at 110,000 or more volts but less than 300,000 volts.
- A minimum radial clearance of 15 feet shall be established for any conductor of a line operating at 300,000 or more volts.

Specific requirements applicable to the construction and operation of the proposed Projects include those from the following sections in California Public Resources Code, Division 4, Chapter 6:

- Section 4427 – Operation of fire-causing equipment
- Section 4428 – Use of hydrocarbon-powered engines near forest, brush, or grass-covered lands without maintaining firefighting tools
- Section 4431 – Gasoline-powered saws and firefighting tools
- Section 4442 – Measures, requirements, and exemptions for spark arresters

California Government Code. California Government Code Sections 51175 through 51189 provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. CAL FIRE is responsible for classifying Fire Hazard Severity Zones (FHSZs) based on statewide criteria and makes the information available for public review. Furthermore, local agencies must designate, by ordinance, Very High FHSZs within their jurisdiction based on the recommendations of CAL FIRE.

CPUC General Orders (GOs) 128 and 165. GO 128 establishes rules governing the construction of underground electric and communication lines to promote and safeguard public health and safety. GO 165 establishes requirements for inspections of electric distribution and transmission facilities (excluding those facilities contained in a substation) in rural, high fire threat areas in order to ensure safe and high-quality electrical service.

CPUC GO 95: Rules for Overhead Transmission Line Construction. CPUC GO 95 governs the design, construction, and maintenance of overhead electrical lines. Rule 31.1 generally states that this should be done in accordance with accepted good practices for the given location conditions known at the time by the persons responsible for the design, construction, and maintenance of the overhead electrical lines and equipment. Rule 35 of GO 95 requires the following clearances between bare-line conductors and vegetation in high fire-threat areas:

- Four-foot radial clearances for any conductor of a line operating at 2,400 volts or more, but less than 72,000 volts
- Six-foot radial clearances for any conductor of a line operating at 72,000 volts or more, but less than 110,000 volts
- Ten-foot radial clearances for any conductor of a line operating at 110,000 volts or more, but less than 300,000 volts
- Fifteen-foot radial clearances for any conductor of a line operating at 300,000 volts or more

CPUC Fire Threat Zones. In 2018, CPUC approved a statewide Fire-Threat Map (CPUC 2021), which delineates a High Fire-Threat District and is intended to assist with implementation of new fire prevention rules. The map delineates areas in the state where there is an elevated risk and an extreme risk (including likelihood and potential impacts on people and property) from utility-associated wildfires. The Fire-Threat Map helps prioritize fire hazard areas to allow for implementation of new fire-safety regulations adopted by CPUC in December 2017. Electric investor-owned utilities must file an annual report that contains a fire-prevention plan containing specified information for its overhead electric facilities in the High Fire-Threat District. Increased vegetation management and new fire regulations also apply to the High Fire-Threat District. The Project sites are not located in an area designated as having elevated or extreme fire threat (CPUC 2021).

Power Line Fire Prevention Field Guide 2021 Edition. The Power Line Fire Prevention Field Guide outlines procedures to minimize the risk of wildfire caused by electrical power lines and equipment. CAL FIRE, the state's three investor-owned utilities (Pacific Gas and Electric Company, SCE, and San Diego Gas and Electric), and other California electric utilities have mutually developed the comprehensive field guide for their personnel. In addition to safety of the public, the guide details fire hazard reduction maintenance procedures for the safety of conductors and certain hardware.

California Department of Forestry and Fire Protection. CAL FIRE is tasked with reducing wildfire-related impacts and enhancing California's resources. CAL FIRE responds to all types of emergencies, including wildland fires and residential/commercial structure fires. In addition, CAL FIRE is responsible for the protection of approximately 31 million acres of private land within the state and, at the local level, is responsible for inspecting defensible space around private residences. CAL FIRE is responsible for enforcing State of California fire safety codes included in the California Code of Regulations and the California Public Resources Code. Section 1254 of the California Environmental Quality Act (CEQA) Guidelines identifies minimum clearance requirements required around utility poles.

CAL FIRE also inspects utility facilities and makes recommendations regarding improvements in facility design and infrastructure. Joint inspections of facilities by CAL FIRE and the utility owner are recommended by CAL FIRE so that each entity may assess the current state of the facility and successfully implement fire prevention techniques and policies. Violations of state fire codes discovered during inspections are required to be brought into compliance with the established codes. If a CAL FIRE investigation reveals that a wildfire occurred as a result of a violation of a law or negligence, the responsible party could face criminal and/or misdemeanor charges (CAL FIRE 2020). For cases where a violation of a law or negligence has occurred, CAL FIRE has established the Civil Cost Recovery Program, which requires parties liable for wildfires to pay for wildfire-related damages.

CAL FIRE maps FHSZs based on fuel loading, slope, fire history, weather, and other relevant factors as directed by California Public Resources Code, Sections 4201–4204, and California Government Code Sections 51175–51189. FHSZs are ranked from Moderate to Very High and are categorized for fire protection within a Federal Responsibility Area, State Responsibility Area, or Local Responsibility Area under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively.

Mutual Aid Agreements. The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed. The KCFD participates in 14 Mutual Aid Agreements with neighboring fire suppression organizations (KCFD 2021). In some instances, the closest available resource may come from another fire department.

Local

Kern County General Plan

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 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.

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 areas. 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. As defined by the KCFD Wildland Fire Management Plan, the proposed project site is located within an Agriculture/Non-Wildland area (KCFD 2009).

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 Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in April 2020 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 5 (Mt. Pinos Communities), which is not within a fire hazard severity zone within the Mt. Pinos Communities fire plan management area (KCFD 2020).

2020 Kern County Multi-Jurisdictional Hazard Mitigation Plan

Approved by FEMA in April 2021, the Kern County Multi-Jurisdictional Hazard Mitigation Plan covers each of the natural hazards that pose a risk to the County. The plan identifies risk to assets, people, and property as well as identifies mitigations strategies for the identified vulnerabilities. The document also serves to coordinate mitigation efforts between multiple jurisdictions.

Kern County Emergency Operations Plan

The Kern County Emergency Operations Plan establishes emergency management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). The purpose of the plan is to preserve life and property through planning, preparedness measures, and training (Kern County 2008)

Fire Prevention Standard No. 503-507 Solar Panels

The KCFD 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 2019).

4.18.4 Impacts and Mitigation Measures

Methodology

The proposed projects' potential impacts regarding wildfire hazards are evaluated in this section. Potential impacts associated with wildfires have been evaluated using a variety of resources, including CAL FIRE's

FHSZ maps, fire history data, vegetation data from the project's *Biological Analysis Report* (QK, 2021), the project's *Revised Preliminary Soil and Geological Evaluation* (BSK Associates, 2020), and project location 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 *CEQA Guidelines* Appendix G, 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 VHFSZs, and if the project would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan;

b) 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;

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; or

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire 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 proposed project site is not located in within a High or Very High FHSZ or within a State Responsibility Area and is not anticipated to impair an adopted emergency response plan or emergency evacuation plan. The proposed project is located on existing, flat agricultural land and is surrounded by similar agricultural land uses. The proposed project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Implementation of Mitigation Measure MM 4.14-1 (Section 4.14, *Public Services*) requires implementation of a fire safety plan during project construction and operations that includes provisions for staff training, equipment availability, and notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services on site. Therefore, the proposed project would not impair an adopted emergency response plan or emergency evacuation plan and impacts would be *less than significant*.

Mitigation Measures

Implement Mitigation Measure MM 4.14-1, as described in Section 4.14, *Public Services*..

Level of Significance after Mitigation

Impacts would be less than significant.

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.

As discussed in Section 4.18.2, *Environmental Setting*, the project site is not located in or near a High or Very High FHSZ or within a State Responsibility Area. In addition, the Kern County Fire Department (KCFD) Wildland Fire Management Plan designates the project site as being located within an Agriculture/Non-Wildland area (KCFD 2009). The project site is characterized by agricultural land and flat terrain (slopes less than 1-percent). Fire history data indicates two small fires have occurred within 1.5 miles of the project site, along Copus Road. Larger fires have occurred approximately 4 miles to the south of the proposed project, associated with the steeper terrain and annual grassland present in the Plieto Hills and Wheeler Ridge area. The proposed project does not include permanent occupancy, though during construction the project site would be temporarily occupied by construction personnel. During operations, 11 full-time employees are expected to maintain the site during normal business hours. The site will operate 24 hours a day 7 days a week.

Construction

Construction activities would temporarily introduce ignition sources due to the use of vehicles, heavy machinery, and spark or heat-generating tools and equipment. The project would adhere to the Kern County Fire Code, the 2019 California Fire Code (CFC), and consult with the Kern County Fire Department to ensure all fire safety requirements are met. The solar panel array would follow the regulatory standards defined in Kern County Fire Prevention Standard No. 503-507, which 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. The proposed project would also be required to adhere to Chapter 33 of the CFC, which outlines standards for fire safety during construction activities. As the project involves the installation of energy systems, it would comply with CFC Chapter 12 Energy Systems. Additionally, the project would involve the use of hazardous materials during construction in small quantities. In accordance with the Hazardous Materials Release Response Plans and Inventory Act, a hazardous materials business plan would be provided to the Kern County Environmental Health Services and hazardous materials used will comply with CFC Chapter 50 Hazardous Materials.

Also, as discussed in Section 4.14, *Public Services*, MM 4.14-1 requires preparation of a Fire Safety Plan prior to the issuance of grading or building permits. This Plan will be implemented during construction, operation, and decommissioning activities and will require that internal combustion engines, both stationary and mobile, shall be equipped with spark arresters; light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation, and equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials. During construction, the project 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 detailed in the Kern County.

Operation

The project is anticipated to start operation on December 31, 2022 and is excepted to operate for 35 years. Operational requirements would consist of maintenance activities, repairing panels and batteries, maintain vegetation clearance, and monitoring energy production. The project would include a lithium-ion battery

energy storage system and would be physically arranged in racks that would be housed in temperature-controlled facilities referred to as the battery enclosures. The storage system would be installed following all applicable design, safety, and fire standards for the installation of energy storage systems, including, but not limited to, National Fire Protection Association (NFPA) Standard 855 (Standard for the Installation of Stationary Energy Storage Systems (ESS)) and Section 1206 of the California Fire Code. NFPA Standard 855 includes criteria for fire prevention and suppression associated with ESS installations, such as setbacks and proper design of sprinkler systems. It considers ventilation, detection, signage, listings, and emergency operations responding to ESS emergencies. Implementation and compliance with these design and safety regulations would ensure wildfire risk associated with the projects is reduced.

The proposed project also includes a battery energy storage system (BESS), which can 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 effective in extinguishing battery fires. Class D extinguishers are used for lithium-metal fires only. To further increase safety, the battery units are usually low voltage, encased in a steel enclosure and are set apart from combustible materials. The BESS would also have a fire rating in conformance with County standards and specialized fire suppression systems installed for the battery rooms. All non-battery rooms would have County-approved standard sprinkler systems. The structure would also have HVAC cooling in the battery room to further maintain cool temperatures within the unit.

The project would have two gen-tie lines at 230 kV and 70 kV on a shared infrastructure that would connect the collector substations to the project's POI. The total length of the gen-tie would be up to 11 miles from the on-site collector substations to the existing PG&E Wheeler Ridge Substation. Additionally, 12 kV collector lines would connect the various on-site project components to transmit energy to the larger transmission line system. As described previously, fire safety measures would be implemented, including vegetation clearance, to ensure that construction and operation of the proposed project components, including the gen-tie line, are implemented per applicable fire protection and environmental, health, and safety requirements. The project would also adhere to CPUC General Order No. 95. which formulates the requirements for overhead line design, construction, and maintenance, the application.

As discussed in Section 4.14, *Public Services*, MM 4.14-1 requires that the project proponent/operator develop and implement a Fire Safety Plan that contains notification procedures and emergency fire precautions consistent with the 2019 California Fire Code and Kern County Fire Code for use during construction, operation, and decommissioning. Under this Fire Safety Plan, construction and maintenance personnel would be trained and equipped to extinguish small fires, thus reducing the risk of fire on site. In addition, emergency contact information would be posted outdoors in an easily visible place and its location would be shared with all contractors during the required initial safety training before any work is allowed on site. Signage would be posted around the solar collection units, combiner boxes, disconnect switches and inverters, clarifying dangers and shock hazards. All National Electric Code regulations governing PV systems signage would be followed. In case of emergency, the entire plant would be shut off using a utility disconnect. The site utility disconnect would be located on the transformer pad and in an area that is accessible at all times. Master switch operation would require site access through the main gate only.

Decommissioning

At end of 35 years, the project would be taken offline and permanently out of service. The proposed project's reclamation and restoration process would consist of the removal of aboveground structures, removal of below-ground foundations and infrastructure, and restoration of the site to its pre-construction

condition. The decommissioning process is anticipated to be completed roughly 12 months after the project has been out of service. The reclamation process may be completed in multiple phases to ensure the entire site is returned to its pre-construction condition. As with construction, decommissioning activities would introduce temporary ignition sources to the project site. Decommissioning activities would also comply with requirements of Mitigaton Measure MM 4.14-1, whould would require the preparation of a project specific Fire Safety Plan.

With the adherence to safety standards and applicable codes and regulations, and implementation of MM 4.14-1 (Fire Safety Plan), the project is not anticipatred to exacerbate wildfire risk and thereby expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire and impacts would be *less than significant* with mitigation.

Mitigation Measures

Implementation of Mitigation Measure MM 4.14-1 would be required, as described in Section 4.14.

Level of Significance after Mitigation

Impacts would be less than significant

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 not directly require new or expanded infrastructure other than that which is planned as part of the project. Impacts associated with construction, operations/maintenance, and decommissioning of the project are part of the proposed project analyzed herein. As such, any potential temporary or ongoing environmental impacts related to these components of the proposed project have been accounted for and analyzed in this EIR as part of the impact assessment conducted for the entirety of the project. In addition, the proposed project would be required to comply with all regulatory requirements and mitigation measures outlined in this EIR for the purposes of avoiding or substantially lessening significant impacts associated with the use of vehicles, heavy machinery, and spark or heat-generating tools and equipment. No adverse physical effects beyond those already disclosed and addressed would occur as a result of implementation of the proposed or associated infrastructure. Therefore, the installation and maintenance of associated infrastructure would not exacerbate wildfire risk or result in impacts to the environment beyond those already disclosed throughout this document, and impacts would be *less than significant.*

Mitigation Measures

Implementation of Mitigation Measure MM 4.14-1 would be required, as described in Section 4.14.

Level of Significance

Impacts would be 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 instability, or drainage changes.

As discussed in Section 4.18.2, *Environmental Setting*, the proposed project site is not located in or near a High or Very High FHSZ or within a State Responsibility Area. The proposed project site is nearly flat (slope gradients of lass than 1%). CAL FIRE mapping data indicates low or no erosion potential on the proposed project site (CAL FIRE 2009). Although the project site and surrounding study area 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.

Slope failures, mudflows, and landslides are common in areas where steep hillsides and embankments are present, and such conditions would be exacerbated in a post-fire environment where vegetative cover has been removed. Vegetation plays a vital role in maintaining existing drainage patterns and the stability of soils. Plant roots stabilize the soil and leaves, stems, and branches intercept and slow water, allowing it to more effectively percolate into the soil. Removal of surface vegetation reduces the ability of the soil surface to absorb rainwater, and can allow for increased runoff that may include large amounts of debris and mud flows. If hydrophobic conditions exist after a fire, the rate of surface water runoff is increased since water percolation into the soil is reduced. The potential for surface runoff and debris flows therefore increases significantly for areas recently burned by large wildfires (Moench and Fusaro 2012). A review of historical fire data revealed that no fires have occurred on the proposed project site (CAL FIRE 2021c). As such, the proposed project site is in an area that has a low risk of downslope or downstream flooding, landslides, or post-fire slope instability due to the proposed project site's location on relatively flat terrain and lack of post-fire conditions on site.

However, as discussed in Section 4.7, *Geology and Soils*, the proposed project would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) and the SWPPP would also specify various types of BMPs, including erosion control BMPs, to prevent soil from moving offsite in accordance with MM 4.7-4. The project proponent will also be required to perform a design-level geotechnical report (MM 4.7-3) to address potential soil stability impacts and prescribe specific design requirements to address these potential impacts related to unstable soils. Implementation of the SWPPP and MMs 4.7-3 and 4.7-4 are expected to minimize potential flooding, runoff, or slope instability impacts that may occur post-fire and potential impacts associated with post-fire flooding, runoff, or slope instability are considered *less than significant.*

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4 would be required, as described in Section 4.7.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative wildfire impacts is considered the Valley Region of Kern County. A cumulatively significant impact related to wildfire risks could occur as a result of the Project. As

such. adverse effects of wildfire risk tend to be localized; therefore, impacts from nearby projects would be limited, if any, and the Project site would be primarily affected by Project activities. Refer to Table 3-4, *Cumulative Projects List*, for a list of projects currently planned or approved within the cumulative study area that may have the potential to contribute to a significant cumulative impact with regard to wildfire.

The project site is not located within a CAL FIRE Fire Hazard Severity Zone. The project area is located in a predominately flat agricultural region of Kern County. The nearest Very High Fire Hazard Severity Zone (VHFSZ) is located approximately 20 miles south of the proposed project site, near the Mount Pinos and Fraizer Mountain communities. Prior to the issuance of grading or building permits, the project proponent/operator would be required to develop and implement a Fire Safety Plan for use during construction, operation, and decommissioning, as discussed in Section 4.14, *Public Services*, Mitigation Measure 4.14-1. Measures to be included in the Fire Safety Plan include, but not limited to: all internal combustion engines, both stationary and mobile, shall be equipped with spark arresters.; light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation; and equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials. As such, project-related impacts are specific to the proposed project site and would not significantly contribute to (or be shared with an additive sense) the impacts on other project sites.

Nevertheless, 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 and, thus, would result in a significant and unavoidable 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 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 have the potential to result in a cumulative impact related to the installation or maintenance of associated infrastructure and, thus, would result in a significant and unavoidable cumulative impact.

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 to minimize potential flooding, runoff, or slope instability impacts that may occur after a fire event.

As concluded in the discussion of project impacts above, with the implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4, 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.

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4, as dscribed in Section 4.7, *Geology and Soils*, would be required; as well as implementation of Mitigation Measure MM 4.14-1, as described in Section 4.14, *Public Services*.

Level of Significance after Mitigation

Cumulative impacts would remain signficant and unavoidable.

Chapter 5
Consequences of Project Implementation

5.1 Environmental Effects Found to Be Less than Significant

CEQA Guidelines Section 15128 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.

Issues that were found to have no impact or less-than-significant impacts do not need to be addressed further in this EIR. Based on the findings of the NOP/IS and the results of scoping, it was determined that the project would have no impact with regard to the following impact thresholds:

- Population and Housing
- Recreation

The proposed project would have temporary workers traveling to the project site during construction. It is estimated that up to 650 workers per day would be required during peak construction periods for the proposed project. The entire construction process is anticipated to take 12 to 18 months, and therefore, project-generated workers would only be in the local area on a temporary basis. Construction workers are expected to travel to the site from various local communities and locations throughout Southern California, and few, if any workers expected to relocate to the surrounding area because of these temporary jobs. If temporary housing should be necessary, it is expected that accommodations (i.e., extended stay hotels, apartments, RV parks, homes for rent or sale) would be available in the nearby cities and communities of Bakersfield, Taft, Arvin, Lebec, Maricopa, or Bear Valley Springs. Therefore, the project is not anticipated to directly or indirectly induce the development of any new housing or businesses within the local communities. The finished facility would have 11 full-time equivalent employees responsible for maintenance and other activities related to ongoing operations once construction is finished. Due to the small number of full-time equivalent employees, it is anticipated that the local housing stock would be adequate to accommodate operations personnel should they relocate to the area, without requiring the need for the construction of new housing. In addition, even if the maintenance/monitoring employees were hired from out of the area and relocated to eastern Kern County, the addition of any such families to the project area would not result in a substantial increase in the number of users at local parks or 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:

- Aesthetics
- Agricultural 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
- Traffic and Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

5.2 Significant Environmental Effects that Cannot Be Avoided

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 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	Implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated to reduce visual impacts that would limit vegetation removal, provide screening fencing that would reduce the visibility of perimeter project features, provide color treatment of structure, and ensure the site is kept free of debris. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open	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. View impacts associated with these existing and proposed development would persist throughout the operational lifespan of projects. The project would result in significant and unavoidable impacts related to views, visual quality and visual character despite the implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7. Although implementation of mitigation measures would reduce visual impact severity, there are no feasible mitigation measures

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
	valley landscape character of the project site, impacts to visual resources would remain significant and unavoidable.	that would maintain the visual character of the area. The conversion of approximately 2,475 acres of privately owned land to a solar energy production facility is considered a significant and unavoidable cumulative impact.
Agricultural and Forestry Resources	Implementation of the project would convert Important Farmland to nonagricultural use. The project also conflicts with current zoning of agricultural use and Williamson Act Land Use contracts. A total of 1,403.94 acres are subject to Williamson Act Land Use contracts, all of which have documented petitions filed for non- renewal and cancellation. No feasible mitigation measures are available to reduce the impacts to a less than significant level, therefore, impacts related to the conversion of Important Farmland would be significant and unavoidable.	Kern County's population growth and urbanization would result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), and the proposed project's contribution to the conversion of agricultural land to non-agricultural uses would be cumulatively considerable. Additionally, the project would result in a significant impact involving the cancellation of Williamson contracts. 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 cumulatively considerable when viewed in connection with the effects of urbanization and loss of Farmland.. Notwithstanding the beneficial factors of the proposed project, which reduce project impacts, the conversion of Important Farmland to non-agricultural use and the cancellation of contracted lands, combined with other area projects would be significant and unavoidable.
Air Quality	The construction emissions generated by the project individually would not exceed SJVAPCD thresholds, and emissions for NO_X, CO, and PM_{10} during construction of the project are below the SJVAPCD's significance threshold with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9. As such, it was determined that the project would not obstruct SJVAPCD's ability to achieve further progress toward attainment of the state standards. Regarding project impacts related to the exposure of sensitive receptors to substantial pollutant concentrations, even with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-12 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	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 emissions generated and the effect on public health and welfare. Therefore, cumulative impacts for criteria pollutants are considered significant and unavoidable during temporary construction and decommissioning of the project after implementation of Mitigation Measures MM 4.3-1 through MM 4.3-12. Cumulative impacts related to operation would be less than significant.

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
	would result in significant and unavoidable project-level impacts.	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 would result in significant and unavoidable cumulative level impacts.
Biological Resources	There would be no significant and unavoidable project impacts.	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. 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. Additionally, the installation of PV panels has the potential to cause impacts to migratory birds associated with collisions. 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	There would be no significant and unavoidable project impacts.	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.

5.3 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.

5.4 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, 11 full-time employees, responsible for maintenance and other activities related to ongoing facility operations, would be present on-site. Although approximately 650 employees are anticipated for construction, 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.

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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, 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 project has the potential to have significant adverse effects on:

- Aesthetics (project and cumulative)
- Agriculture and Forestry Resources (project and cumulative)

- Air Quality (project and cumulative)
- 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 chapter discusses alternatives that are capable of avoiding or substantially lessening effects on these resources. The significant and unavoidable impacts of the project are discussed below.

Aesthetics

Implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. While the visual change associated with project development would generally be faint and muted when viewed from a distance of greater than 0.3 miles (see Figures 4.1-4, 4.1-5, and 4.1-6), visual contrast resulting from the introduction of dark project features (e.g., solar arrays and gen-tie infrastructure) would be noticeable as experienced from local roads and I-5. Even with distance and reduced detail, solar arrays would be experienced as a low, horizontal band of dark color that, while not dominant, would attract attention from local viewers. In addition, the severity of visual changes and impacts to visual quality and character would be heightened and visual contrasts would be stronger when solar arrays are viewed from locations closer than 0.3 miles such as Copus Road and Old River Road which run parallel to Sites 2, 3, and 4 (see Figure 4.1-3). As shown on the figure, segments of these roads would offer immediate foreground views to solar arrays and perimeter fencing and along Old River Road, solar panels would be within the immediate foreground of westerly and easterly oriented views (albeit for a brief duration). Further, the introduction of thousands of solar panels, the onsite substation, O&M building, energy storage component, and gen-tie infrastructure would increase the footprint and presence of solar and electrical transmission development in the County and along the I-5 corridor. The project would introduce solar development elements where they do not currently dominate the landscape (i.e., west of I-5 and near the I-5/SR-99 split), resulting in significant aesthetic impacts.

Mitigation Measures MM 4.1-1 through MM 4.1-4 outlined in Chapter 4.1 of this EIR would be implemented to reduce anticipated visual quality impacts. These measures would limit vegetation removal, provide for screening fencing that would reduce the visibility of perimeter project features, provide for color treatment of structures to better blend into the landscape, and ensure that ensure that the site is kept free of debris and trash. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open valley landscape character of the project site and surrounding area and further minimize view effects, impacts to visual resources would remain significant and unavoidable.

Additionally, while other projects in the region would also be required to implement various mitigation measures to reduce impacts associated with visual character and quality, the conversion of land in a presently rural area to solar energy production, mining, commercial and residential uses cannot be mitigated to a degree that impacts are no longer significant. Development of the project would result in significant impacts associated with visual character and quality in the area. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7, the project's contribution to significant cumulative impacts associated with visual character and quality in the San Joaquin Valley would be significant and unavoidable.

Agricultural Resources

Although implementation of the project would convert a very small portion of the County's Prime Farmland, the conversion of large areas designated Important Farmland (includes Prime Farmland, Farmland of Statewide Importance, and Unique Farmland) constitutes a significant impact. Additionally, implementation of the project would require the cancellation of multiple Williamson Act Contracts across the project parcels and would convert agricultural (grazing) land to a non-agricultural use. 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 Williamson Act Contracts, therefore, impacts related to the cancellation of an open space contract would be significant and unavoidable.

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 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

Section 4.3, *Air Quality*, evaluates localized impacts, including projects located within a 1- and 6- mile radius; evaluates consistency with existing air quality plans; and compares project emissions to CARB emission projections for the region, as well as the San Joaquin Valley Air Pollution Control District (SJVAPCD)'s criteria pollutant thresholds.

As discussed in Section 4.3.4, the construction emissions generated by the project individually would not exceed SJVAPCD thresholds, and emissions for NO_X, CO, and PM_{10} during construction of the project are below the SJVAPCD's significance threshold with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9. As such, it was determined that the project would not obstruct SJVAPCD's ability to achieve further progress toward attainment of the state standards.

Regarding project impacts related to the exposure of sensitive receptors to substantial pollutant concentrations, even with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-12 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 would result in significant and unavoidable project-level 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 emissions generated and the effect on public health and welfare.

Therefore, cumulative impacts for criteria pollutants are considered significant and unavoidable during temporary construction and decommissioning of the project after implementation of Mitigation Measures MM 4.3-1 through MM 4.3-12. Cumulative impacts related to operation would be less than significant. 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 would result in significant and unavoidable cumulative level impacts.

Biological Resources

As analyzed in Section 4.4 *Biological Resources*, with implementation of mitigation measures MM 4.4-1 through MM 4.4-22, 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 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.

The residual effects on migratory birds of the project were determined to be less than significant. The cumulative analysis in Section 4.4 of this EIR analyzes the potential for these incremental impacts of the project to combine with other past, present, and reasonably foreseeable projects to cause or contribute to a significant cumulative effect within the Central Valley portion of the Pacific Flyway for the duration of the project. Identified cumulative projects that involve the installation of PV panels have the potential to cause impacts to migratory birds associated with collisions. Little is known about the potential for impacts to migratory birds associated with the "lake effect." However, significant impacts to migratory birds could occur due to collision with PV panels or other project structures causing mortality or injury. Further, as take authorization for migratory bird species is not available, any mortality of migratory birds would be considered significant under CEQA. Therefore, the project, in combination with all identified cumulative projects, would result in a cumulatively significant impact on migratory birds that may remain significant and unavoidable after implementation of mitigation.

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 4.14-1, MM 4.7-3 and MM 4.7-4, 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

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

- Support the generation of renewable energy in the State of California per the recent objectives outlined in SB 100 to implement carbon neutral and eligible renewable energy resources to supply 100 percent of the State's retail electricity sales by the year 2045. The project would supply solar photovoltaic (PV) energy that would assist the State in meeting these goals.
- Establish a large-scale solar PV and battery energy storage facility in a manner that maximizes the production of reliable electricity in an economically feasible manner. The project would also provide California Community Choice Aggregators with zero-emissions renewable energy to support their goals of providing that same clean energy to their customers.

- Use proven and established solar and energy storage technology to optimize efficiency and minimize operational risks and maintenance requirements.
- Provide revenues that help support public services within Kern County.
- Create green jobs within both Kern County and the broader State of California.
- Develop the project in an economically feasible, commercially viable, and broadly financeable manner.
- Meet all of the above-listed objectives while designing, constructing, and operating project facilities in an environmentally responsible manner consistent with County, state, and federal requirements.

6.3 Overview of the Project

The project proposes a utility scale photovoltaic (PV) solar facility with associated infrastructure on approximately 3,469.87 acres of privately owned land in the valley region of Kern County. As stated above, the facility would consist of 5 sites (Sites 1 to 5) to generate a combined (up to) 300 MW of renewable electrical energy. Site 1 includes approximately 160 acres and is the western-most site of the 5 project site areas. Access to Site 1 is provided from Old River Road through Site 2. Site 2 covers approximately 1,229.37 acres and is located immediately east of Site 1. Site 3 covers approximately 789.21 acres and is located immediately south of Site 2. Access to Sites 2 and 3 is via Old River Road and Copus Road. Site 4 is a stand-alone site (i.e., not geographically connected to Sites 1, 2, 3 or 5). Site 4 covers approximately 289.11 acres and is located east of Sites 1, 2, and 3, between Interstate (I-) 5 and State Route (SR-) 99 and has access from Copus Road. Site 5 would be preserved as on-site conservation land (and therefore would not be developed) and covers approximately 1,002.18 acres north of Site 2 and Site 3. The total project acreage, including the on-site conservation land/land not to be developed (Site 5) is 3,469.87 acres.

The project also includes the installation of associated (up to) 100 MW of energy storage facilities. The project would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge Substation. Both lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. Additionally, 12 kV collector lines would connect the various project components to transmit energy to the larger transmission line system. As mentioned above, Site 5 would be preserved as on-site conservation land and would not be developed.

Implementation of the project as proposed includes the following requests:

a) Conditional Use Permits (CUPs) to allow for the construction and operation of four solar facilities with a total generating capacity of approximately 300 MW AC of renewable energy (broken down by site, below) including up to 100 MW of combined energy storage (for all sites), within the A (Exclusive Agriculture) Zone District (in Zone Maps 159, 160, and 161) pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance. Please note the total MW listed for each site represents the maximum MW that could be developed on the site; however, total MW for the entire project site would not exceed 300 MW.

   - **Site 1** (up to 20 MW AC)
     - CUP No. 9, Map No. 159 for approximately 160 acres
   - **Site 2** (up to 235 MW AC)
     - CUP No. 27, Map No. 160 for approximately 1,229.37 acres

- **Site 3** (up to 125 MW AC)
  - CUP No. 28, Map No. 160 for approximately 789.21 acres
- **Site 4** (up to 30 MW AC)
  - CUP No. 27, Map No. 161 for approximately 289.11 acres
- **Site 5** (Onsite conservation land for benefit of solar project)
  - CUP No. 29, Map 160 for approximately 996.98 acres

b) General Plan Amendment to the Circulation Element of the Kern County General Plan to remove future road reservations on the section and mid-section lines within the project boundaries:

- General Plan Amendment No. 2, Map No. 159
- General Plan Amendment No. 3, Map No. 160
- General Plan Amendment No. 4, Map No. 161

c) Williamson Act Land Use Contract Cancellations:

- No. 21-01
  - Cancellation of approximately 289.11 acres from Contract No. 28397, Book 4273, page 13
- No. 21-03
  - Cancellation of approximately 427.65 acres from Contract No. 10965, Book 4373, page 24
- No. 21-04
  - Cancellation of approximately 338.35 acres from Contract No. 28386, Book 4272, page 933

Power generated by the project would assist the State in achieving the Renewables Portfolio Standard under Senate Bill (SB) 350, which requires 50 percent of all electricity sold in the State to be generated from renewable energy sources by December 31, 2030. Power generated by the project would be sold to California investor-owned utilities, municipalities, community choice aggregations, or other purchasers in furtherance of the California Renewable Energy Portfolio Standard.

The anticipated Commercial Operation Date for the project is December 2022, and the project is expected to operate for approximately 35 years, although a longer project life expectancy could be realized by replacing and repowering certain project components. 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.

6.4 Overview of Alternatives to the Project

Under CEQA, and as indicated in California Public Resources Code 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 project, the aforementioned objectives established for the 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 project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 300 MW solar PV facility on the 3,469.87-acre site would not occur. The No Project Alternative would not require the General Plan Amendments (GPA), Conditional Use Permits (CUP), and Williamson Act Land Use Contract Cancellations for construction and operation of a 300 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: General Plan/Specific Plan and 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 8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater); and 8.1/2.5 (Intensive Agriculture/Flood Hazard). All five sites are currently located within the A (Exclusive Agriculture) or A FPS (Exclusive Agriculture, Floodplain Secondary Combining) Zone District. No solar facilities would be developed under this alternative and, therefore, no General Plan Amendments, 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 8.1 (Intensive Agriculture, min. 20-acre parcel size); 8.1/2.3 (Intensive Agriculture/Shallow Groundwater); and 8.1/2.5 (Intensive Agriculture/Flood Hazard). The 8.1 (Intensive Agriculture (Min 20 Acres) 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 GPAs or 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, only Site 3 and a portion of Site 2 would be developed with a solar facility with the capacity to generate up to 210 MW of renewable electric energy. Under this

alternative, Site 1 (160 acres) and Site 4 (289.11 acres) would not be developed for solar energy production and would remain as undeveloped land, as it is currently used. Under Alternative 3, Site 2 acreage would be reduced to 942 acres (from the 1,229.37-aces proposed under the Project). The overall developable acreage under Alternative 3 would be 1,731-acres. Site 5 (on-site conservation land), as proposed, would not be included in the site plan as part of Alternative 3. The gen-tie interconnection would remain unchanged. Development of Sites 2 and 3 would include construction of a substation, 100 MW energy storage facility, and associated infrastructure, as under the project. Eliminating development of Sites 1 and 4 and a portion of Site 2 from the project would reduce the project's total generation capacity from 300 MW to 210 MW, and reduce the developed area from approximately 2,472.89 acres to approximately 1,731 acres. Similar to the project, this alternative would require GPAs to the Circulation Element of the General Plan, 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 kilowatt hours 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 2,472.89 acres of total rooftop area) may be required to attain project's capacity of 300 MW of solar PV generating capacity. Because of space or capital cost constraints, many rooftop solar PV 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 PV generation. Alternative 4 would generate 300 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 onsite 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 2,472.89 acres of privately owned land in the valley region of Kern County. The project would generate up to 300 MW of renewable electrical energy that would be supported by both a 70 kV and a 230 kV overhead and/or underground electrical transmission line(s) originating from two on-site project collector substations and terminating at the PG&E Wheeler Ridge Substation. Both lines would convey electricity back and forth between various phases of the Sandrini Solar project and the larger electrical grid. Additionally, 12 kV collector lines would connect the various project components to transmit energy to the larger transmission line system. The project also includes the installation of associated (up to) 100 MW of energy storage facilities. A portion of the project site (Site 5) would be preserved as 1,002.18 acres of on-site conservation land and would not be developed.	N/A
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	• Required by CEQA • Avoids need for GPAs, CUPs, and Williamson Act Contract Cancellations • Avoids all significant and unavoidable impacts • Greater impacts to greenhouse gas (GHG) emissions • Less impact in all remaining environmental issue areas
Alternative 2: Agricultural Production 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.	• Avoids need for GPAs, CUPs, and Williamson Act Contract Cancellations • Similar impacts to biological 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 impacts in all remaining environmental issue areas

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 solar facility on approximately 1,731 acres. This alternative is still expected to contain enough land to construct a solar array field capable of generating approximately 210 MW. The project site would require GPAs to the Circulation Element, issuance of CUPs, and Williamson Act Contract Cancellations.	• Similar impacts to hazards and hazardous materials, land use and planning and public services • Greater overall impacts to GHG emissions • Less impact in all remaining environmental issue areas
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 300 MW of PV solar distributed on rooftops throughout the valley region of Kern County. Electricity generated would be for on-site use only.	• Avoids need for GPAs, 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, agricultural resources, and biological resources • Similar impacts to energy, air quality and GHG emissions • Less impact in all remaining issue areas

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), agricultural resources (project and cumulative), and biological resources (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.

- 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 solar site. Similar solar power, energy production from the 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 300 MW of power that the project would produce, the alternative would require more space than what the project site current accommodates. Consequently, the project site would need to be expanded, and there is the possibility that the project site location may not produce sufficient wind resources for a viable wind project.

As noted above, some of the project's objectives are to assist California in meeting its GHG emission reduction goals through establishing solar PV power-generating facilities to produce reliable electricity in an economically feasible and commercially financeable while minimizing environmental impacts and 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 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 300 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 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 project's objectives are to assist California in meeting its GHG emission reduction goals through establishing solar PV power-generating facilities to produce reliable electricity in an economically feasible and commercially financeable while minimizing environmental impacts and 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 result in additional/greater impacts than the project (aesthetics, air quality, GHG emissions, land use and planning, noise, transportation, 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 emission 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 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 valley region of the County, similar to the project. This alternative is assumed to involve construction of a 300 MW PV solar facility with the ability to store up to 100 MW of energy storage facilities on a site totaling 2,472.89 acres. *CEQA Guidelines* 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 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 project, alternative sites may not include sites with close proximity to transmission infrastructure. Therefore, this alternative was eliminated because it would not avoid or substantially reduce the significant environmental effects of the 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 project with the impacts of each of the alternatives analyzed. Please note that in Alternatives 1 through 4 in Table 6-2, the references to "less, similar, or greater," refer to the impact of the alternative compared to the project, and the impacts "no impact (NI), less than significant (LTS), or significant and unavoidable (SU)," in the parentheses refer to the significance conclusion of the specific alternative.

TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production 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 (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Significant and unavoidable (project and cumulative)	Less (NI)	Less (NI)	Less (SU)	Less (NI)
Air Quality	Significant and unavoidable (project and cumulative)	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Biological Resources	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Cultural Resources	Less than significant with mitigation	Less (NI)	Less (LTS)	Less (LTS)	Less (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)	Less (LTS)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than significant	Greater (LTS)	Greater (LTS)	Less (LTS)	Similar (LTS)
Hazards and Hazardous Materials	Less than significant with mitigation	Less (NI)	Less (LTS)	Less (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)	Less (LTS)
Mineral Resources	Less than significant with mitigation	Less (NI)	Similar (LTS)	Less (LTS)	Less (NI)
Noise	Less than significant with mitigation	Less (NI)	Less (LTS)	Similar (LTS)	Less (LTS)
Public Services	Less than significant with mitigation	Less (NI)	Similar (LTS)	Similar (LTS)	Less (LTS)

TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Transportation	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Tribal Cultural Resources	Less than significant with mitigation	Less (NI)	Less (LTS)	Less (LTS)	Less (LTS)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfire	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Less (LTS)	Less (LTS)	Less (LTS)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	All	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 agricultural land and no change to the scenic vistas or existing visual character and quality 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 impacts to aesthetics compared to the project.

Agriculture and Forestry Resources

Under the No Project Alternative, the project site would remain undeveloped and the proposed solar facility and associated infrastructure would not be installed. The project site would remain in its current state, as undeveloped agricultural land. As such, the No Project Alternative would not involve changes to the existing environment which could result in the conversion of Farmland to non-agricultural. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to agriculture and forestry resources compared to the 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. No exceedance of the SJVAPCD's regional and localized significance thresholds would occur, no confliction with the attainment of the standard, nor would the No Project Alternative contribute to a cumulative net increase of criteria pollutant in the projects' region. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to air quality compared to the 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 project construction or operation would occur. The project site would remain in its current state, as undeveloped agricultural land, which is either fallow or actively planted with annual row crops, and would not contribute to a cumulative loss of wildlife species, including burrowing owls, other raptors, American badgers, San Joaquin kit fox, and migratory birds known to occur or with potential to occur on the project site. As such, the No Project Alternative would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species, on any riparian habitat or other sensitive natural communities, on federally protected wetlands; interfere substantially with the movement of any native resident or migratory fish or wildlife species; conflict with any local policies or ordinances protecting

biological resources; or conflict the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to biological resources compared to the project.

Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. As such, disturbance to potential historical resources, archeological resources, or human remains located onsite would not occur. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to cultural resources compared to the 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. However, it should be noted that the No Project Alternative would not support the goals of California's RPS. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to energy compared to the 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, strong seismic ground shaking, seismic-related ground failure, and landslides; result in substantial soil erosion or loss of topsoil; result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse; be located on expansive soil; soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems; 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 less impacts related to geology and soils compared to the project.

Greenhouse Gas Emissions

Under the No Project Alternative, emissions associated with construction and operation of the proposed solar facility and associated infrastructure 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 GHGs. However, the potential offset of GHG emissions resulting from operation of the solar power generating facility would not be realized. Therefore, impacts would be less than significant under this alternative as it relates to generating GHG emission that may have a significant impact on the environment as this alternative would not offset GHG emissions and the No Project Alternative would result in greater impacts related to GHG emissions compared to the project.

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 the routine transport, use, or 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; emit hazardous waste within 0.25 miles of a school; be located on a site that is included on a list of hazardous materials sites; result in a safety hazard or excessive noise; impair implementation of an adopted emergency response plan; expose people or structures to significant risk of loss, injury, or death involving wildland fires; or generate vectors. Therefore, there would no impact and the No Project Alternative would result in less impacts related to hazards and hazardous materials compared to the 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 decrease groundwater supplies; substantially alter the existing drainage patterns of the site or area in a manner that would result in substantial erosion and/or sedimentation onsite or offsite, result in flooding onsite or offsite; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage system, or impede or redirect flood flows; result in flood hazards, tsunami, or seiche zones; or conflict or obstruct implementation of a water quality plan. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to hydrology and water quality compared to the project.

Land Use and Planning

The No Project Alternative would not develop any new uses at the project site, and, consequently would not require a CUP. As such, the No Project Alternative would not cause a significant environmental impact due to physically dividing an established community or conflicting 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 impacts related to land use and planning compared to the project.

Mineral Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. The No Project Alternative would not result in the loss of availability of a known mineral resource or locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. No oil and gas extraction areas or wells are located on the project site. The nearest oil extraction area is the Rio Viejo Oil Field which is approximately 800 feet south of the project site, and contains several active, idle, canceled, and plugged wells. However, a number of mineral rights holders to oil and gas rights have been identified on the project site including holdings of the Bureau of Land Management and California Resource Company (CRC). As such, MM 4.12-1 has been provided under the proposed project which requires that the applicant enter into discussions with mineral rights owners who can be located and create drilling areas in appropriate locations and distances to provide for the

economically feasible extraction and exploration of oil and gas. Under this alternative no impact would occur and this mitigation measure would not be necessary. Therefore, the No Project Alternative would result in less impacts 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 onsite, 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; generate excessive ground-borne vibration; or expose people residing or working in the project area to excessive noise levels. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to noise compared to the project.

Public Services

Under the No Project Alternative, the project site would remain undeveloped and no new demand for fire or law enforcement protection services 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 and law enforcement protection. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to public services compared to the project.

Transportation

Under the No Project Alternative, the proposed solar facility and associated infrastructure 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, plan, ordinance or policy addressing the circulation system, nor would the No Project Alternative 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 impacts related to transportation compared to the project.

Tribal Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. According to record searches and tribal resource consultations, no tribal resources are present on the project site. However, the absence of specific site information does not necessarily indicate the absence of cultural resources in the project area, as unknown cultural or tribal cultural resources may be present. As such, disturbance to a tribal cultural resource 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 would not occur. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to tribal cultural resources compared to the project.

Utilities and Service Systems

Under the No Project Alternative, the proposed solar facility and associated infrastructure 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; generate solid waste in excess of state or local standards; or conflict with federal, State, and local management and reduction statues and regulations related to solid waste. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to utilities and service systems compared to the project.

Wildfires

Under the No Project Alternative, the proposed solar facility and associated infrastructure would not be constructed. As such, the No Project Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan; expose occupants to pollutant concentrations from a wildfire; require the installation or maintenance of associated infrastructure; or expose people or structures to significant risks. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to wildfire compared to the project.

Comparison of Impacts

The No Project Alternative would avoid the significant and unavoidable impacts associated with development of the project. This alternative would result in less impacts to all remaining environmental issue areas with the exception of GHG emissions; since this alternative would not offset GHGs through the operation of a solar energy facility, impacts to GHG emissions 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*. 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: General Plan/Specific Plan and Zoning Build-Out Alternative

Environmental Impact Analysis

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a battery energy storage system would not be installed and solar energy would not be generated on the site.

Aesthetics

Under this alternative, the project site would be developed in accordance with the existing agricultural zone designations, thereby retaining the total amount of agricultural land in Kern County. This alternative would

include the development of agricultural production on the entire project site and associated infrastructure for agricultural production such as irrigation systems. Development of the project site with new agricultural uses would be visually similar to the types of uses in the project area and would not introduce new sources of light; thus, potential impacts to scenic vistas, scenic resource, visual character and quality, and daytime and nighttime views would be reduced. As such, significant and unavoidable impacts related to visual character and quality would be eliminated under this alternative. In addition, as agricultural uses would be similar to those in the surrounding area, this alternative would not combine with cumulative projects to create a significant unavoidable cumulative impact related to visual character and quality. Therefore, impacts would be less than significant under the Agricultural Production Alternative and this alternative would result in less aesthetics impacts compared to the project.

Agriculture and Forestry Resources

Under this alternative, the project site would be developed in accordance with the existing agricultural zone designations, thereby retaining the total amount of agricultural land in Kern County. As noted in Section 4.2, *Agricultural Resources*, approximately 1% of the project site is located on Prime Farmland, 35.1% is located within Farmland of Statewide Importance, and 4.3% is located on Unique Farmland. In addition, as the project site is under a Williamson Act Contract, the agricultural development under this alternative would not conflict with the existing Williamson Act Contract and no cancellation of a Williamson Act Contract would be required. As such, project-level and cumulative impacts related to the cancelation of a Williamson Act Contract would be eliminated under this alternative. As it relates to other changes in the existing environment that could result in the conversion of Farmland or forestry land to nonagricultural or non-forest use, as the Agricultural Production Alternative would develop agricultural uses in an area surrounded by agricultural uses, this alternative would not involve other changes in the existing environment. Therefore, no impacts would occur under the Agricultural Production Alternative and this alternative would result in less agriculture and forestry resources impacts compared to the project.

Air Quality

Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in short-term emissions from the use of heavy construction equipment. The complete build-out of the project site to agricultural uses would require similar heavy equipment to the project including equipment used for preparing the land for farming (e.g., tracker/loader/backhoes/tiller, etc.). However, the build-out of agricultural uses would not require haul truck trips to the same extent at the project as solar panels would not need to be hauled to the project site. All stationary and portable compression-ignited diesel-fueled agricultural equipment used under the General Plan/Specific Plan and Zoning Build-Out Alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts emission limits and would in turn reduce transportation fuel usage. This alternative would also adhere to all SJVAPCD rules and regulations applicable to agricultural activities, which would serve to reduce emissions from initial implementation. As similar heavy equipment on a daily basis would be required under this alternative as with the project, impacts would be less than significant for project-level impacts. Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would have temporary impacts during initial implementation and would be less than significant at the project level.

Ongoing emissions associated with the proposed agricultural uses under the General Plan/Specific Plan and Zoning Build-Out Alternative would be greater due to routine emissions associated with agricultural

vehicles, and the seasonal tilling of land for agricultural uses, etc. Given this increase, this alternative would result in greater ongoing air quality impacts in the air basin compared to the project.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. The alternative's potential to expose sensitive receptors to substantial pollutant concentrations associated with visibility impacts would be similar to that of the project and would be less than significant with adherence to SJVAPCD Rule 4101, which does not allow discharge into the atmosphere for any single source of emission. In addition, during initial implementation of this alternative, it is possible that onsite workers could be exposed to Valley Fever as fugitive dust is generated during initial implementation. However, this alternative would implement dust-minimizing techniques as required to be implemented through SJVAPCD Regulation VIII and required Conservation Management Practice Plans. However, 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 contribute to the transmission of respiratory diseases like COVID-19. Based on 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, development of the General Plan/Specific Plan and Zoning Build-Out Alternative would result in greater impacts than under the project.

Based on the information above, impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative related to air quality would be less than significant, but greater than those of the project.

Biological Resources

The agricultural land upon which the project would be developed is either fallow or actively planted with annual row crops. The General Plan/Specific Plan and Zoning Build-Out Alternative would include the development of agricultural production on the entire project site and associated infrastructure for agricultural production such as irrigation systems. Build-out of the entire site to agricultural uses would affect biological resources on the project site as this alternative would replace eleven existing vegetation communities on the project site, with agricultural crops on the entire project site. 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. The increased human presence would deter wildlife from nesting, foraging, or being on the project site. 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), similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would potentially have direct or indirect impacts on California Glossy Snake, San Joaquin Coachwhip, Blunt-nosed Leopard Lizard, Least Bell's Vireo, Tricolored Blackbird, Swainson's Hawk, White-tailed Kite, Burrowing Owl, Loggerhead Shrike, Northern Harrier, LeConte's Thrasher, Tipton Kangaroo Rat and Short-nosed Kangaroo Rat, San Joaquin Kit Fox, San Joaquin Antelope Squirrel, American Badger, Tulare Grasshopper Mouse, and other nesting birds.

Complete build-out of agricultural uses under this alternative would involve ground disturbances throughout areas of the project site. As this alternative would not require any permits, this alternative Alterative 2 would adhere to regulations protecting candidate, sensitive, or a special-status species. In addition, as the General Plan/Specific Plan and Zoning Build-Out Alternative would not install any solar uses, Mitigation Measure MM 4.4-9 would not be implemented.

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, one sensitive plant

community, Valley Sink Scrub, is expected to be impacted by project implementation. Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would implement Mitigation Measure MM 4.4-20 to mitigate impact to sensitive plant communities. Thus, impacts to riparian habitat or other sensitive natural community, or jurisdictional waters would be less than significant. Alternative 2 impacts would be less than that of the project.

As it relates to the movement of any resident or migratory fish or wildlife species, due to the nature of agricultural production uses, development of the General Plan/Specific Plan and Zoning Build-Out Alternative would not restrict the passage for the San Joaquin kit fox. This alternative would be less than significant.

Due to the nature of agricultural production uses, potential impacts to state or federally protected wetlands and consistency with local policies and ordinances protecting biological resources would be less than significant.

The General Plan/Specific Plan and Zoning Build-Out Alternative 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, similar to the project.

Cumulative impacts under the project were determined to be significant and unavoidable as projects that involve the installation of PV panels have the potential to cause impacts to migratory birds associated with collisions. As the General Plan/Specific Plan and Zoning Build-Out Alternative would not include the installation of any solar panels, cumulative impacts would be eliminated under this alternative.

Based on the above, impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative were determined to result in less than significant impacts at the project-level and cumulative level as it relates to impacts to candidate, sensitive, or special-status species, the movement of any resident fish or wildlife species, state or federally protected wetlands, or consistency with local policies and ordinances protecting biological resources due to existing laws in place and due to the nature of the agricultural production uses. Therefore, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in less impacts related to biological resources compared to the project.

Cultural Resources

The agricultural land upon which the project would be developed is either fallow or actively planted with annual row crops. The General Plan/Specific Plan and Zoning Build-Out alternative would include the development of agricultural production on the entire project site and associated infrastructure for agricultural production such as irrigation systems. No historical or archaeological resources were identified during site surveys and literature reviews. Under the General Plan/Specific Plan and Zoning Build-Out, ground disturbance within the project site would be shallow and would be unlikely to result in a potentially significant impact to historical or archaeological resources. As this alternative would not require the implementation of mitigation measures, such as Mitigation Measures MM 4.5-1 through MM 4.5-4, the General Plan/Specific Plan and Zoning Build-Out Alternative would adhere to all applicable federal, state, and local regulations governing cultural resources, including California Penal Code, Section 622.5. Therefore, impacts to historical or archaeological resources under the General Plan/Specific Plan and Zoning Build-Out Alternative would be less than significant.

There is no indication that any particular location within the project site has been used for purposes of human burial in the recent or distant past. However, in the unlikely event that human remains are inadvertently discovered during project initial implementation activities, this alternative would comply with Health and Safety Code, Section 7050.5, which includes requirements similar to Mitigation Measure

MM 4.5-4, and would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in less cultural resource impacts compared to the project as this alternative would result in less ground disturbance than required for the proposed project.

Energy

The project site would be developed with agricultural uses and would require similar heavy duty equipment during initial implementation including equipment used for grading (e.g., graders, tracker/loader/backhoes/tiller, etc.); however, haul truck trips would be less than the project under this alternative. During ongoing processes, transportation-related energy (petroleum-based fuels) use would be greater under this alternative than under the project due to continuous heavy equipment operation and energy use related to irrigation water pumping. Overall, the agricultural uses under this alternative would require similar energy consumption.

All stationary and portable compression-ignited diesel-fueled agricultural equipment used under the General Plan/Specific Plan and Zoning Build-Out Alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts emission limits and would in turn reduce transportation fuel usage. In addition, the fuel efficiency of the vehicles being used by the employees and visitors under this alternative during ongoing processes is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during ongoing processes would decrease over time. Given the CARB restriction in vehicle idling and the increase in vehicle efficiency, impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources during both initial implementation and ongoing processes would be less than significant under this alternative. Furthermore, similar to the project, the General Plan/Specific Plan and 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 General Plan/Specific Plan and Zoning Build-Out Alternative related to energy use would be less than significant, but greater than those of the 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 project.

Geology and Soils

Initial implementation of the General Plan/Specific Plan and Zoning Build-Out Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the California Building Code (CBC) 2019 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. The General Plan/Specific Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2 as no structures are proposed to be developed under the alternative. Furthermore, the General Plan/Specific Plan and Zoning Build-Out Alternative would adhere to requirements of the National Pollutant Discharge Elimination System (NPDES), which includes requirements similar to Mitigation Measure MM 4.7-3 and would comply with Kern County Grading Code (Section 17.28.070), which includes requirements similar to Mitigation Measure MM 4.7-4 in order to address potential soil erosion and loss of top soil. Additionally, no septic tanks are proposed under this alternative. As such, this alternative would not implement Mitigation Measure MM 4.7-5. As it relates to

unique paleontological resource or site or unique geologic feature, under the General Plan/Specific Plan and Zoning Build-Out Alternative any ground disturbance within the project site would be shallow and would be unlikely to result in a potentially significant impact to paleontological resources. As such, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.7-6 through MM 4.7-8. The General Plan/Specific Plan and Zoning Build-Out Alternative would adhere to all applicable federal, state, and local regulations governing paleontological resources, including Public Resources Code Section 5097.5 and Section 30244. Therefore, impacts to paleontological resources would be less than significant.

Based on the above, impacts to geology and soils would be less than significant, and less impactful under this alternative compared to the project as no structures are proposed under the General Plan/Specific Plan and Zoning Build-Out Alternative and ground disturbance required under this alternative would be shallow.

Greenhouse Gas Emissions

As portions of the General Plan/Specific Plan and Zoning Build-Out Alternative would develop land uses that would emit GHG emissions throughout the life of the project (from increased water usage, traffic, and operation of agricultural equipment), this would result in a net gain of GHG emissions within California. Unlike the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would not assist an offtaker (a purchaser of renewable energy in a solar power purchase agreement) in reducing its GHG emissions as consistent with the California Global Warming Solutions Act. Therefore, although both this alternative and the project would result in less-than-significant GHG emissions impacts, impacts from the General Plan/Specific Plan and Zoning Build-Out Alternative would be greater when compared to the project since the beneficial reduction in GHG emissions would not occur.

Hazards and Hazardous Materials

There are no known hazardous materials in the soil that would be disturbed during initial implementation of the agricultural uses. Agricultural uses on the project site could require the use of hazardous materials during ongoing processes including herbicides and pesticides. However, as with the project, standard Best Management Practices (BMPs) would ensure that exposure to potentially hazardous materials used or found onsite would be reduced or minimized. As the alternative would not include handling of any equipment that would be required for installation of a solar project or result in the generation of construction debris, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.9-1, MM 4.9-2, and MM 4.9-3. Under the General Plan/Specific Plan and Zoning Build-Out Alternative any ground disturbance within the project site would be shallow and would be unlikely to result in significant hazard to the public or environment; therefore, this alternative would not implement Mitigation Measure MM 4.9-4.

Therefore, impacts from significant hazards to the public or environment through the routine transport, use, or disposal of hazardous materials and through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

As the project site is not within 0.25 miles of an existing or proposed school, is not included on a list of hazardous materials sites, nor is the project site within the Kern County Airport Land Use Plan, the General Plan/Specific Plan and Zoning Build-Out Alternative would have less than significant impacts, similar to the project.

Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative is not anticipated to physically interfere with emergency vehicle access or personnel evacuation from the site during initial implementation or ongoing processes of this alternative. Implementation of Mitigation Measure MM 4.9-4 would not be required.

As it relates to wildland fires, the project site is not located within a high fire hazard severity zone. In addition, the General Plan/Specific Plan and Zoning Build-Out Alternative includes the development of agricultural uses, which would not increase the potential for wildfires from occurring on the project site. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1.

Impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative and the project would result in less-than-significant impacts and potential impacts related to hazards and hazardous materials would be less compared to the project.

Hydrology and Water Quality

The conversion of the project site to agricultural uses would not likely increase impervious surfaces. While conversion of the project site to agricultural uses would likely result in intensive ground disturbance, the erosion potential would be similar under this alternative as with the project. However, operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as plowing, whereas the project's operation would not; thereby, posing a greater potential impact to water quality. Operation of agricultural uses could also affect groundwater quality through the application of pesticides or herbicides.

Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would include implementation of BMPs during initial implementation and ongoing processes to prevent the occurrence of soil erosion and discharge and would adhere to the applicable requirements required under the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-4. As the alternative would not include handling of any equipment that would be required for installation of a solar project, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measure MM 4.9-1. During ongoing processes of this alternative, agricultural uses would be developed and little to no impervious surfaces would be on the project site; as such, the General Plan/Specific Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measure MM 4.10-1.

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. Similar to the project, water demands would be met through existing water distribution lines that are located along the perimeter of the project site. It is assumed that water demand under the General Plan/Specific Plan and Zoning Build-Out Alternative would also be sufficiently supplied from a privately-owned groundwater well located adjacent to the project site in the Wheeler Ridge-Maricopa Water Storage District (WRMWSD) or water transfers purchased via a Municipal and Industrial (M&I) deal with WRMWSD. Therefore, similar to the project, this alternative would not substantially deplete ground water supplies or interfere substantially with groundwater recharge; however, water use would be greater than under the project.

With regard to existing drainage patterns, installation of the agricultural uses under the General Plan/Specific Plan and Zoning Build-Out 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. The General Plan/Specific Plan and Zoning Build-Out Alternative would adhere

to requirements of the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-4. In addition, as agricultural uses would be developed, little to no impervious surfaces would be on the project site, the General Plan/Specific Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measure MM 4.10-1.

As it relates to flood hazard, tsunami, or seiche zone, 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.

This alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan as the General Plan/Specific Plan and Zoning Build-Out Alternative would require BMPs and drainage control requirements that would be consistent with the Basin Plan.

Overall, although both the project and this alternative would result in less-than-significant impacts, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in greater impacts to hydrology and water quality compared with the project as ongoing processes of the agricultural uses as proposed under this alternative would likely involve the application of pesticides or herbicides from the proposed agricultural uses.

Land Use and Planning

Unlike the project, the General Plan/Specific Plan and 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 General Plan land use and zoning designations. This alternative would be consistent with current zoning as well as existing land use plans, policies, and regulations and no GPAs or CUPs would be required, as under the project. Therefore, there would be no impact and the General Plan/Specific Plan and Zoning Build-Out Alternative would result in less impacts related to land use and planning compared to the project.

Mineral Resources

No oil and gas extraction areas or wells are located on the project site. The nearest oil extraction area is the Rio Viejo Oil Field which is approximately 800 feet south of the project site, and contains several active, idle, canceled, and plugged wells. However, a number of mineral rights holders to oil and gas rights have been identified on the project site including holdings of the Bureau of Land Management and California Resource Company (CRC). As such, MM 4.12-1 is provided under the proposed project which requires that the applicant enter into discussions with mineral rights owners who can be located and create drilling areas in appropriate locations and distances to provide for the economically feasible extraction and exploration of oil and gas. Under this alternative no impact would occur and this mitigation measure would not be necessary. Therefore, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in less impacts related to mineral resources compared to the project.

Noise

During initial implementation, impacts under this alternative would be similar to the impacts of the project, as the build-out of the project site to complete agricultural uses would require similar heavy equipment as required for the construction of the project including equipment used related to farming (e.g., tracker/loader/backhoes/tiller, etc.). However, the conversion of agricultural uses would not require haul truck trips to the same extent at the project as solar panels would not need to be hauled to the project site.

During ongoing processes, with regard to the proposed agricultural uses, this alternative would generate greater noise compared to the project associated with the daily operation of agricultural equipment and worker vehicles.

Under this alternative, the number of onsite equipment used during initial implementation is assumed to be similar to the project and, thus, the General Plan/Specific Plan and Zoning Build-Out Alternative would not result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards; thus, impacts would be less than significant. Initial implementation of the General Plan/Specific Plan and Zoning Build-Out Alternative would involve similar heavy equipment as required for the construction of the project that would generate vibration. However, given that initial implementation activities would not have the potential to damage structures, effects from vibrations generated during initial implementation of this alternative are not anticipated to impact vibration sensitive receptors.

As with the project, ongoing processes under the General Plan/Specific Plan and Zoning Build-Out Alternative would not result in the generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards; thus, impacts would be less than significant. Ongoing processes of the General Plan/Specific Plan and Zoning Build-Out Alternative would involve worker truck trips 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.

Based on the above, both the project and this alternative would result in less-than-significant impacts and this alternative would result in less noise impacts compared to the project.

Public Services

While initial implementation of the General Plan/Specific Plan and Zoning Build-Out Alternative would result in an increase number of workers on the project site, the General Plan/Specific Plan and Zoning Build-Out Alternative includes the development of agricultural uses, which would not increase the potential for fires from occurring on the project site during initial implementation. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1. During ongoing processes, development of agricultural uses could result in a slight increase in long-term population compared to the project as agricultural uses would require more workers on the project site. However, this slight increase would not require the development of new or physically altered KCFD facilities. Impacts related to fire protection would be less than significant.

With regard to law enforcement protection, the project site is located in a relatively remote location. There would be limited initial implementation -related traffic for the development of agricultural uses under the General Plan/Specific Plan and Zoning Build-Out Alternative as haul truck trips would not be required for the transportation of solar panels, as required under the project. As such, this alternative would not have a significant adverse effect on the Kern County Sheriff's Office (KCSO) protective service provision or California Highway Patrol (CHP)'s ability to patrol the highways. During ongoing processes under this alternative, agricultural uses could increase 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. In addition, because the General Plan/Specific Plan and Zoning Build-Out Alternative would not construct a solar facility and require a CUP, Mitigation Measures

MM 4.14-2, MM 4.14-3, MM 4.14-4, and MM 4.14-5 would not be implemented. Impacts related to law enforcement protection would be less than significant.

This alternative and the project would both result in less-than-significant impacts to public services, and the General Plan/Specific Plan and Zoning Build-Out Alternative would result in similar impacts to public services compared to the project.

Transportation

With regard to the agricultural uses, there would be limited initial implementation-related traffic for the increase in project site use to additional agricultural operations as construction-related traffic such as haul truck trips and worker vehicle trips would be reduced under this alternative. Once operational, the General Plan/Specific Plan and Zoning Build-Out Alternative would involve more routine vehicle trips associated with agricultural operations on approximately 3,600 acres of agricultural land compared to the proposed project which would include a maximum of 11 full-time equivalent employees. It should also be noted that approximately 1,000 acres of the project site would not be developed under the proposed project that could be potentially utilized for active agricultural operations under the General Plan/Specific Plan and Zoning Build-Out Alternative. 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.

As it relates to increasing hazards due to a geometric design feature or incompatible use, as the General Plan/Specific Plan and Zoning Build-Out Alternative does not include the installation of solar panels on the project site, this alternative would not require the use of oversized vehicles during initial implementation, and, as such, would not create a hazard to the public. With regard to emergency access, as this alternative would not cause a significant increase in congestion or significance worsen the existing service levels at intersection roadways, the General Plan/Specific Plan and Zoning Build-Out Alternative would have a less-than significant impact on emergency access during initial implementation and ongoing processes.

Therefore, although both this alternative and the project would result in less-than-significant impacts, impacts to transportation from the General Plan/Specific Plan and Zoning Build-Out Alternative would be greater when compared to the project as agricultural uses is expected to increase the amount of trips to the project site as compared to the project.

Tribal Cultural Resources

According to record searches and tribal resource consultations, no tribal resources are present on the project site. As any ground disturbance within the project site would be shallow under this alternative, development of the General Plan/Specific Plan and Zoning Build-Out Alternative would be unlikely to result in a potentially significant impact to historical or archaeological resources. Therefore, impacts to tribal cultural resources would be less than significant and impacts to tribal cultural resources under the Agricultural Production Alternative would be less than those of the project.

Utilities and Service Systems

The proposed agricultural uses would not likely increase impervious surfaces, and, as such, would not increase surface runoff. However, water demand from the proposed agricultural uses would increase substantially in comparison to the project due to the consistent demand from agricultural uses. Additionally, the proposed agricultural uses under this alternative would produce solid waste associated with the employees during the ongoing processes, which would need to be disposed of at local landfills.

As with the project, complete build-out of the project site to agricultural uses would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, natural gas, and telecommunications. In addition, initial implementation of the General Plan/Specific Plan and Zoning Build-Out Alternative would not substantially alter stormwater drainage. Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would adhere to requirements of the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-4, and would include BMPs designed to prevent the occurrence of soil erosion and discharge of other initial implementation-related pollutants that could contaminate water quality.

With regard to ongoing processes, the agricultural uses would substantially increase water demand. Under the General Plan/Specific Plan and Zoning Build-Out Alternative, water would be obtained for the irrigation of crops either through private wells or a local water district. During non-drought years, irrigated agricultural production at the project site is feasible due to the surface water availability as well as the use of on-site wells, if necessary. During drought years, irrigated production may be limited due to limited surface water supplies; however, this may be offset by increasing private groundwater usage from existing wells operated by the applicable water district in order to supply adequate water services. Wastewater and solid waste generation associated with this alternative would also slightly increase compared to the project due to the increase in the number of employees associated with the agricultural uses. As it relates to stormwater drainage, as agricultural uses would be developed, little to no impervious surfaces would be on the project site and the General Plan/Specific Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measure MM 4.10-1.

Although both the project and this alternative would result in less-than-significant impacts, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in greater impacts to utilities and service systems compared to the project as this alternative would have an increased demand on the water supply and local landfills compared to the project due to the proposed agricultural uses.

Wildfire

Impacts related to wildfire for 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.

As with the project, this alternative 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 site is located in a rural, sparsely developed areas 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 during the initial implementation

would be trained in fire prevention and emergency response. Therefore, the General Plan/Specific Plan and Zoning Build-Out Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site is located entirely within a Local Responsible Area (LRA). The potential for wildfire on the project site is not considered high. As the General Plan/Specific Plan and Zoning Build-Out Alternative includes the complete build-out of agricultural uses, development of agricultural uses would not increase the potential for wildfires from occurring on the project site. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1. As such, impacts under this alternative related to exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be less than significant.

With regard to the installation or maintenance of associated infrastructure, unlike the project, agricultural uses would not require any installation of associated infrastructure. As such, this alternative would reduce fire risk that may result in temporary or ongoing impacts to the environment.

Similar to the project, complete build-out of agricultural uses on the General Plan/Specific Plan and Zoning Build-Out Alternative could alter the existing drainage patterns and flowpaths compared to existing conditions. This alternative, similar to the project, would require implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include erosion and sediment control BMPs during initial implementation, thereby reducing the potential of erosion and siltation during initial implementation and would control potential flooding events that could occur during initial implementation. During ongoing processes of this alternative, agricultural uses would be developed and little to no impervious surfaces would be on the project site; as such, the Agricultural Production Alternative would not require implementation of Mitigation Measure MM 4.10-1. As such, similar to the project, the General Plan/Specific Plan and 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, impacts would remain less than significant under this alternative as it relates to wildfire impacts. Impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative would be less as compared to the project.

Comparison of Impacts

The General Plan/Specific Plan and Zoning Build-Out Alternative would result in greater impact to air quality, energy, GHG emissions, hydrology and water quality, transportation, and utilities and services systems as it relates to water supply. The alternative would result in similar impacts to mineral resources and public services. This alternative would result in less impacts in all remaining environmental issue areas. This alternative would result in greater energy impacts as this alternative would not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the project. This alternative would result in greater air quality impacts compared to the project as ongoing emissions associated with the proposed agricultural uses would be greater due to routine emissions associated with agricultural vehicles, and the seasonal tilling of land for agricultural uses, etc. This alternative would result in greater GHG emission impacts compared to 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 plowing and the application of pesticides or herbicides from the proposed agricultural uses. The increase in human population onsite during ongoing

processes is also responsible for greater impacts to transportation, and utilities and service systems. This alternative would eliminate the significant and unavoidable impacts associated with aesthetics (project and cumulative), agriculture and forestry resources (project and cumulative), and biological resources (cumulative only).

Relationship to Project Objectives

The General Plan/Specific Plan and Zoning Build-Out Alternative would not achieve any of the project objectives listed above in Section 6.2.

6.7.3 Alternative 3: Reduced Acreage Alternative

Environmental Impact Analysis

Aesthetics

Under the Reduced Acreage Alternative, the project would reduce its development footprint from 2,472.89 acres to 1,731 acres and would generate up to 210 MW of renewable electric energy. Site 5 (on-site conservation land), as proposed, would not be included in the site plan as part of Alternative 3. The Reduced Acreage Alternative would still include construction of the gen-tie interconnection, substation, 100 MW energy storage facility, and associated infrastructure, as under the project.

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 Reduced Acreage Alternative, development of a solar facility would not block available views of the Wind Wolves Preserve from preserve trails. Additionally, while located near the base of San Emigdio Mountains and situated upon an elevated landform in relation the project site, the distance between the project site under the Reduced Acreage Alternative and trails within the Wind Wolves Preserve would result in limited distant views of colors and lines displayed by low-profile project component.

Under the Reduced Acreage Alternative, the severity of visual changes and impacts to visual quality and character would be heightened and visual contrasts would be stronger when solar arrays are viewed from locations closer than 0.3 miles such as Copus Road and Old River Road which run parallel to Sites 2 and 3. While the placement of a solar facility and associated infrastructure, would alter the views under the Reduced Acreage Alternative, similar to the project, Mitigation Measures MM 4.1-1 through MM 4.1-4 would be implemented to reduce impacts. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open valley landscape character of the project site and surrounding area and further minimize view effects, impacts to visual resources under the Reduced Acreage Alternative would be similar to the project and would remain significant and unavoidable.

Similar to the project, the nearest eligible state scenic highway is a section of SR-166 located within San Luis Obispo County, approximately 25 miles southwest of the project site under the Reduced Acreage Alternative. Given this distance and intervening topography, the Reduced Acreage Alternative project would not be visible from any Officially Designated or Eligible State Scenic Highway.

While this alternative would avoid development on portions of the project site (i.e., Sites 1, 4, and portions of Site 2), this alternative does include the installation of a solar facility and associated infrastructure.

Similar to the project, the Reduced Acreage Alternative would similarly implement Mitigation Measures MM 4.1-1 through MM 4.1-4, which would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary and would limit vegetation removal and would plant native vegetation. However, similar to the project, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped grassland landscape character of the project site, impacts to visual resources would remain significant and unavoidable. Cumulative impacts under the Reduced Acreage Alternative would be significant and unavoidable as related projects coupled with development of the Reduced Acreage Alternative would convert land in a presently rural area to a degree that cannot be mitigated, similar to the project.

As the Reduced Acreage Alternative includes the development of a solar facility, as with the project, the potential for solar panels to result in light and glare impacts would be similar to the project during construction and operation of the Reduced Acreage Alternative. As such, this alternative would implement Mitigation Measures MM 4.1-5 through MM 4.1-7, which include demonstrating consistency with the applicable provisions of the *Dark Skies Ordinance* (Chapter 19.81 of the Kern County Zoning Ordinance, demonstrating that solar panels and hardware are designed to minimize glare, and demonstrating that onsite building utilized non-reflective materials. Impacts related to light and glare under the Reduced Acreage Alternative site would be less than significant.

The Reduced Acreage Alternative would have less overall impacts to aesthetics compared to the project due to the reduction in project site size under this alternative; however, impacts would remain significant and unavoidable.

Agriculture and Forestry Resources

Under the Reduced Acreage Alternative, the project would reduce its development footprint from 2,472.89 acres to 1,731 acres and would generate up to 210 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a solar facility and associated infrastructure.

Although the overall development footprint would be reduced compared to the proposed project, the Reduced Acreage Alternative would still develop a solar 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, this alternative would convert Farmland of Statewide Importance and Unique Farmland. While portions of site 2 and 3 where the Reduced Acreage Alternative would be developed are under a Williamson Act Contract, as with the project, the project proponent would petition for cancellation of the Williamson Act Contract in the public interest. With payment of the cancellation fee, as required by the Government Code, the Williamson Act Contract cancellation process would be complete and impacts associated with Williamson Act lands would be similar to the project and thus would be less than significant. As it relates to other changes in the existing environment that could result in the conversion of Farmland or forestry land to nonagricultural or non-forest use, as with the project, although the Reduced Acreage Alternative may cause changes to the existing environment, there is no evidence that the project would affect agricultural land in the vicinity during operational activities. In addition, the project and Reduced Acreage Alternative would be consistent with the goals, policies, implementation measures, and action programs of the Kern County General Plan (Goals 2, 3, and 5; Policies 7, 9, and 12) that promote the preservation and use of available natural resources.

Similar to the project, as implementation of this alternative would require cancellation of a Williamson Act Contract, which is in non-renewal status, impacts related to the cancellation of an open space contract would

be significant and unavoidable and would not be eliminated under this alternative. As the Reduced Acreage Alternative would include a smaller footprint, the Reduced Acreage Alternative would result in less impacts to agriculture and forestry resources compared to the project.

Air Quality

Under the Reduced Acreage Alternative, the use of construction vehicles, heavy equipment operation, and worker carpool trips would be similar compared to the project, but grading and other construction activities would not occur on the parcels associated with Sites 1, 4, and a portion of Site 2. Similar to the project, this alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. As similar heavy equipment on a daily basis would be required under this alternate as with the project, impacts would be less than significant for project-level construction impacts. Additionally, under the Reduced Acreage Alternative, emissions would be negligible in comparison to the air basin's total emissions and would not exceed the SJVAPCD's criteria air pollutant thresholds; thus, impacts would be less than significant. Operational emissions would likely be reduced under this alternative as fewer maintenance trips would be required with the reduced project scale. As such, operational impacts would be less than significant.

Similar to the project, the Reduced Acreage Alternative would be required to comply with Regulation VIII, which requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would also control the release of the *Coccidioides immitis* fungus from construction activities. However, exposure to the *Coccidioides immitis* fungus would be potentially significant and MM 4.3-1 through MM 4.3-12, and specifically 4.3-4 and MM 4.3-10, are provided to further reduce impacts associated with Valley Fever and to protect on-site construction workers and nearby receptors. Compliance with regulation VIII, including implementation of a dust control plan, is sufficient mitigation to reduce air quality effects from construction-related PM_{10} emissions to a less-than-significant level. Impacts associated with the exposure of sensitive receptors to substantial TACs due to the project-generated construction emissions would be less than significant.

In addition, similar to the project, the Reduced Acreage Alternative would not cause the LOS of any studied intersection or roadway to operate at LOS E or worse during construction or operation or require adding signalization or channelization to an intersection. As such, a CO hotspot analysis would not be required, and the potential project-generated impacts associated with CO hotspots would be less than significant. Furthermore, similar to the project, the Reduced Acreage Alternative would not exceed the applicable significant impact levels; therefore, impacts to ambient air quality would be less than significant.

Overall, impacts to project and cumulative air quality under this alternative would be significant and unavoidable similar to the project. The Reduced Acreage Alternative would result in less overall impacts related to air quality compared to the project.

Biological Resources

As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS, as with the project, the Reduced Acreage Alternative would have potentially have direct or indirect impacts on California Glossy Snake, San Joaquin Coachwhip, Blunt-nosed Leopard Lizard, Least Bell's Vireo, Tricolored Blackbird, Swainson's Hawk, White-tailed Kite, Burrowing Owl, Loggerhead Shrike, Northern Harrier, LeConte's Thrasher, Tipton Kangaroo Rat and

Short-nosed Kangaroo Rat, San Joaquin Kit Fox, San Joaquin Antelope Squirrel, American Badger, Tulare Grasshopper Mouse, and other nesting birds.

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-19, which generally include conducting preconstruction surveys and implementing avoidance procedures, among other measures, impacts would be reduced to less than significant. However, as this alternative would avoid disturbing 30% of the land within the parcels associated with Sites 1, 4, and portion of Site 2 of the project site, the Reduced Acreage Alternative would directly reduce the impact to biological resources.

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, construction activities could result in significant impacts related to one sensitive plant community, Valley Sink Scrub. However, similar to the project, of the Reduced Acreage Alternative would implement Mitigation Measure MM 4.4-20, which would mitigate impacts to Valley Sink Scrub by preserving compensation land at a ratio of 2:1 acres, to reduce impacts to less than significant. Additionally, similar to the project, while it is not anticipated that jurisdictional aquatic resources will be directly impacted under the Reduced Acreage Alternative, an approximate 3-mile portion of the proposed gen-tie route in Zone Map #160 may permanently impact approximately 0.1 acre of these resources. In addition to direct impacts to resources, construction activities have the potential to cause storm water runoff to jurisdictional resources. Similar to the project, this alternative would implement Mitigation Measure MM 4.4-21, which would conduct a preliminary delineation of aquatic features of the project site, obtain the appropriate permits and authorizations from regulating agencies, require a qualified professional to draft a mitigation and monitoring plan, and other applicable measures, to reduce impacts to a less than significant level.

As it relates to the movement of any resident or migratory fish or wildlife species, similar to the project, the development of the Reduced Acreage Alternative could restrict the passage for the San Joaquin kit fox and, as such, would implement Mitigation Measure MM 4.4-22, which would require openings during operation to enable wildlife from moving freely through the project site and would serve to reduce impacts to less than significant.

The Reduced Acreage Alternative, as with the 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 Reduced Acreage Alternative would be less than significant with implementation of mitigation. 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 30% of the land within the parcels associated with Sites 1, 4, and portion of Site 2, the Reduced Acreage Alternative would result in less impact related to candidate, sensitive or special-status species as well as impacts related to any riparian habitat or other sensitive natural community when compared to the project. All other impacts related to biological resources would be similar compared to the project.

Cultural Resources

While no historical or archaeological resources were identified, ground-disturbing activities associated with the project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.5-1 and MM 4.5-4, which include measures to retain a Lead Archaeologist, preparation of

a Cultural Resources Treatment Plan, retaining the services of Native American Tribal Monitors, and measures to implement when archaeological materials are encountered during the course of grading or construction. In addition, there is no indication that any particular location within the project site has been used for purposes of human burial in the recent or distant past. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, implementation of Mitigation Measure MM 4.5-4, which provides measures to implement when human remains are uncovered during project construction, 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 project due to the reduction in ground disturbance required under this alternative.

Energy

Decreasing project development by 30% would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 210 MW, a reduction from 300 MW as generated under the project, 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 project. Similar to the project, the Reduced Acreage Alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. In addition, the fuel efficiency of the vehicles being used by the employees and visitors under this alternative is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. In addition, similar to the 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 less energy impacts compared to the project as less fuel consumption during construction and operation would occur.

Geology and Soils

Construction of the Reduced Acreage Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2019 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. In addition, similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.7-1, which requires that the project proponent operator shall not place habitable structures within 500 feet of the mapped ground fractures unless a fault investigation is completed as well as implementation of Mitigation Measure MM 4.7-2, which requires critical equipment and underground utilities/transmission lines within 500 feet of mapped active fault traces to be consistent with current County Building Code requirements and approval from the County Engineering Department. In addition, under the Reduced Acreage Alternative, Mitigation Measure MM 4.7-3 would be implemented and requires that prior to issuance of building permits, a full geotechnical study shall be conducted. Implementation of these mitigation measures, as with the project, would serve to reduce impacts related to strong seismic ground shaking, unstable geologic unit, and expansive soils.

In addition, with regard to soil erosion and loss of topsoil, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.7-4, which include incorporating BMPs consistent with the NPDES

Program and limiting grading to the minimum area necessary for construction. Additionally, a septic tank system is proposed under this alternative and similar to the project would implement Mitigation Measure MM 4.7-5 to reduce potential impacts to a less than significant level. As it relates to unique paleontological resource or site or unique geologic feature, similar to the 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 4.7-6 through MM 4.7-8, which would include retention of a qualified paleontologist and implementation of measures if a paleontological resource is found during construction, 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 project, impacts to geology and soils would likely be less than significant, and impacts to geology and soils would be less compared to the project due to the reduction in ground disturbance required under this alternative.

Greenhouse Gas Emissions

Given a smaller project footprint than the project, the Reduced Acreage Alternative would result in fewer GHG emissions during construction and operations when compared with the project. Eliminating 30% of project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 210 MW, a reduction from 300 MW as generated under the project, due to the proportional reduction in project size. As such, impacts related to GHG emissions would be greater under this alternative as compared to the project due to the lower output of energy produced under this alternative.

Hazards and Hazardous Materials

Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2, and MM 4.9-3, which would require applicable measures regarding handling and use of herbicides; a Recycling Coordinator to facilitate recycling of all waste; and preparation of a Hazardous Materials Business Plan. While none of the parcels within the project study area are included on an environmental regulatory database for hazardous materials sites pursuant to Government Code Section 65962.5, Site 4 (parcel 445-062-34) was noted to be adjacent to a large crop production facility owned by Ag Nutrient Solutions that includes bulk storage of hazardous materials. Thus, because the Reduced Acreage Alternative would remove development within Site 4, Mitigation Measure MM 4.9-4 would not be implemented under this alternative.

As project site is not within 0.25 miles of an existing or proposed school, is not included on a list of hazardous materials sites, nor is the project site within the Kern County Airport Land Use Plan, the Reduced Acreage Alternative would have less than significant impacts, similar to the project.

Similar to the project, the Reduced Acreage Alternative is not anticipated to physically interfere with emergency vehicle access or personnel evacuation from the site during construction or operation of this alternative.

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 energy storage facility 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 4.14-1 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 project would result in less-than-significant impacts after implementation of mitigation measures. However, under the Reduced Acreage Alternative, none of the parcels proposed for development would be adjacent to a site listed on an environmental regulatory database for hazardous materials sites pursuant to Government Code Section 65962.5; thus potential impacts from hazards and hazardous materials under the Reduced Acreage Alternative would be less significant compared to the project.

Hydrology and Water Quality

Similar to the project, the Reduced Acreage Alternative would include completion of a NPDES completion form, and would implement Mitigation Measure MM 4.7-4, which would require implementation of a SWPPP, which includes BMPs to prevent the occurrence of soil erosion and discharge. This alternative would also implement Mitigation Measure MM 4.9-1 and MM 4.9-2, which would require the project proponent/operator to designate a Recycling Coordinator to facilitate recycling and the provision of a Hazardous Materials Business Plan. Furthermore, as hazardous materials can mix with stormwater and degrade water quality, this alternative, as with the project, would implement Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan. Implementation of these mitigation measures would serve to reduce impacts related to violating water quality standards or waste discharge requirements; substantially altering drainage patterns; creating or contributing runoff water that would exceed the capacity of existing for planned storm water drainage systems; and placing the project within a 100-year flood hazard area.

Project water supply is primarily anticipated to be obtained from existing off-site groundwater wells. Similar to the project, under this alternative, existing groundwater wells would draw water supply from an existing privately owned water-right and groundwater demand for the solar facility is incorporated into Kern County Subbasin groundwater supply projections. As such, construction and operation of the project proponents would be consistent with the Kern Groundwater Authority GSP and project implementation would not impede sustainable groundwater management of the basin. As it relates to groundwater supplies, water requirements under the Reduced Acreage Alternative, overall construction and operation related water requirements would be reduced under this alternative as compared to the project as less grading would be involved during construction, and operation would have fewer solar panels. As water demand under this alternative would be less than that of the project, it is assumed that water demand under the Reduced Acreage Alternative would also be sufficiently supplied. Therefore, this alternative would not substantially deplete ground water supplies or interfere substantially with groundwater recharge. Furthermore, this alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan as the Reduced Acreage Alternative would require BMPs and drainage control requirements that would be consistent with the Basin Plan.

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.

Overall, impacts related to hydrology and water quality would be less than significant with implementation of mitigation measures similar to those implemented under the project. However, the Reduced Acreage Alternative would have less impact related to hydrology and water quality compared to the project due to the reduced footprint, which would result in reduced grading activities and would reduce the amount of impervious surfaces compared to the project.

Land Use and Planning

Under Alternative 3, the Reduced Acreage Alternative, a 30% reduction in developable acreage, and a 30% reduction in MW is proposed. To achieve this, only Site 3 and a portion of Site 2 would be developed with a solar facility with the capacity to generate up to 210 MW of renewable electric energy. Under this alternative, Site 1 (161 acres) and Site 4 (289 acres) would not be developed for solar energy production and would remain as undeveloped land, as it is currently used. Under Alternative 3, Site 2 acreage would be reduced to 942 acres (from the 1,229.37-aces proposed under the Project). The overall developable acreage under Alternative 3 would be 1,731-acres. Site 5 (on-site conservation land), as proposed, would not be included in the site plan as part of Alternative 3. The gen-tie interconnection would remain unchanged. Development of Sites 2 and 3 would include construction of a substation, 100 MW energy storage facility, and associated infrastructure, as under the project. Eliminating development of Sites 1 and 4 and a portion of Site 2 from the project would reduce the project's total generation capacity from 300 MW to 210 MW, and reduce the developed area from approximately 2,472.89 acres to approximately 1,731 acres.

While the footprint would be reduced, development of the Reduced Acreage Alternative would still require a GPA, CUP, and Williamson Act Contract Cancellation to operate a solar facility on the project site. 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 project.

Mineral Resources

No oil and gas extraction areas or wells are located on the project site. The nearest oil extraction area is the Rio Viejo Oil Field which is located approximately 800 feet south of the project site, and contains several active, idle, canceled, and plugged wells. However, a number of mineral rights holders to oil and gas rights have been identified on the project including holdings of the Bureau of Land Management and California Resource Company (CRC). As such, MM 4.12-1 has been provided under the proposed project which requires that the applicant enter into discussions with mineral rights owners who can be located and create drilling areas in appropriate locations and distances to provide for the economically feasible extraction and exploration of oil and gas. Similar to the project, this alternative would not cause for the transfer, utilization, or any other change of status for these rights.

As such, similar to the project, development of the Reduced Acreage Alternative would not result in the loss of availability of a known mineral resource or locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, impacts would be less than significant under the Reduced Acreage Alternative and depending on the on-site areas where mineral rights holders would have access, could potentially result in less impacts related to mineral resources compared to the project.

Noise

Similar to the project, under this alternative, noise impacts related to construction activities would potentially be significant. As such, Mitigation Measure MM 4.13-1 would be implemented to reduce potential impacts to less than significant. As with the project, operational activities under the Reduced Acreage Alternative would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards. Impacts would be less than

significant. In addition, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.13-1, similar to the project.

As the closest residential receptor is at 100 feet and the furthest at 300 feet, construction-related vibration would not have the potential to damage structures. Operation of the Reduced Acreage Alternative would involve worker truck trips and agricultural equipment use that would be a sufficient distance from structures (i.e., 100 feet or more 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.

Based on the above, this alternative is expected to result in less than significant construction noise, construction, vibration and operational noise impacts. These impacts would be less than those of the project given the reduced footprint under the Reduced Acreage Alternative.

Public Services

Similar to the 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 4.14-1, which would require the implementation of a fire safety plan. Implementation of Mitigation Measure MM 4.14-1 would also reduce fire risks onsite during operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to law enforcement protection, the project site is located in a relatively remote location. 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 fencing would be installed around the perimeter of the project site, which would be approximately 6- to 8-foot-high. 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, impacts to the CHP patrol are not anticipated. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-2 through MM 4.14-5, to reduce potential impacts to a less than significant level.

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 compared to the project.

Transportation

Under the Reduced Acreage Alternative, there would be less construction compared to the project which would decrease haul truck trips. Once operational, there would less routine vehicle trips associated with maintenance of the site under this alternative. 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.

Similar to the project, construction-related traffic would be temporary and operations traffic would be nominal, and would be categorized under Section 15064.3(b)(3), qualitative analysis. Under the Reduced

Acreage Alternative, there would be fewer vehicle trips during construction and operation activities. As such, impacts under this would be less than significant.

As it relates to increasing hazards due to a geometric design feature or incompatible use, similar to the project, the Reduced Acreage Alternative would also require the use of oversized vehicles during construction which could create a hazard to the public by limiting motorist views and by the obstruction of space. As with the project, this alternative would implement Mitigation Measure MM 4.15-1, would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during AM and PM peak hours.

With regard to emergency access, as this alternative would not cause a significant increase in congestion or significance worsen the existing service levels at intersection roadways, the Reduced Acreage Alternative would have a less-than significant impact on emergency access during construction and operation. As with the project, the Reduced Acreage Alternative would also implement Mitigation Measure MM 4.15-1, which would provide further assurances for emergency access.

Based on the above, impacts would be less than significant. Given the reduction in operational trips under this alternative's as compared to the operational trips required under the project, the Reduced Acreage Alternative impacts related to transportation would be less compared to the project.

Tribal Cultural Resources

Under the Reduced Acreage Alternative all overall construction and operational methods, workforce, and timing would be reduced when compared with the project. The SLF search conducted by the NAHC did not indicate the presence of tribal cultural resources within or immediately adjacent to the project site. However, the absence of specific site information does not necessarily indicate the absence of cultural resources in the project area, as unknown cultural or tribal cultural resources may be present. As such, this alternative would implement Mitigation Measures MM 4.5-1, MM 4.5-2, MM 4.5-3, and MM 4.5-4, similar to the project. With implementation of mitigation similar to the mitigation proposed for the project, impacts to tribal cultural resources under this alternative would be less than significant. However, the Reduced Acreage Alternative would result in less impacts related to tribal cultural resources compared to the project due to the reduction in ground disturbance required under this alternative.

Utilities and Service Systems

Reducing the project development by 30% would result in reduced demand for utilities and service systems, as the Reduced Acreage Alternative would generate approximately 210 MW, a reduction from 300 MW as generated under the project, and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the project.

As with the project, installation of solar panels would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, natural gas, and telecommunications. In addition, construction of the Reduced Acreage Alternative would not substantially alter stormwater drainage. As with the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.10-1, which would require the implementation of a SWPPP during construction, which would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality. Furthermore, similar to the project, construction under the

Reduced Acreage Alternative would not generate a significant amount of solid waste and would result in a less than significant impact.

With regard to operation, the solar panels installed under the Reduced Acreage Alternative would require a reduced water demand in comparison with the project. Wastewater and solid waste generation associated with this alternative would also be reduced compared to the 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 project. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control stormwater.

This alternative is expected to result in less-than-significant impacts to utilities and service systems and impacts would be less compared to the project as water, wastewater, and solid waste generation would be reduced compared to the project due to the reduced acreage and number of employees required for maintenance of the solar panels.

Wildfires

As with the project, this alternative 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 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. Therefore, the Reduced Acreage Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan.

Similar to the 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 and operation, which would further reduce the fire risks onsite. As such, impacts under this alternative related to exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be less than significant. Additionally, with implementation of MM 4.14-1, installation and maintenance of associated infrastructure would not exacerbate wildfire risk under this alternative.

Similar to the project, the development proposed under the Reduced Acreage Alternative could alter the existing drainage patterns and flowpaths compared to existing conditions as well as increase impervious surfaces. As with the project, the Reduced Acreage Alternative would implement the SWPPP and Mitigation Measures MM 4.7-3 and MM 4.7-4 to minimize potential flooding, runoff, or slope instability that may occur post-fire, which would reduce potential impacts to a less than significant level.

With implementation of similar mitigation proposed for the project, this alternative is expected to result in less-than-significant impacts to wildfire. The Reduced Acreage Alternative would likely result in less impact compared to the project due to the reduced footprint compared to the project.

Comparison of Impacts

Under the Reduced Acreage Alternative, the project would reduce its development footprint by 30%, from 2,472.89 acres to 1,731 acres and would generate up to 210 MW of renewable electric energy. Site 5 (on-site conservation land), as proposed, would not be included in the site plan as part of Alternative 3. The

Reduced Acreage Alternative would still include construction of the gen-tie interconnection, substation, 100 MW energy storage facility, and associated infrastructure, as under the project.

Due to the reduced footprint, the Reduced Acreage Alternative would result in less or similar impacts for the majority of environmental issue areas. However, this alternative would result in greater impacts to GHG emissions given its reduced solar energy output. In addition, this alternative would not eliminate significant and unavoidable impacts associated with aesthetics (project and cumulative), agriculture and forestry resources (project and cumulative), and biological resources (cumulative only).

Relationship to Project Objectives

The Reduced Acreage Alternative would achieve all of the project objectives listed above in Section 6.2 to a lesser degree as compared to the project due to the reduction in solar panels proposed under this alternative.

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.

As with the project, the nearest eligible state scenic highway is a section of SR-166 located within San Luis Obispo County, approximately 25 miles southwest of the No Ground-Mounted Utility-Solar Development Alternative. Given this distance and intervening topography, the No Ground-Mounted Utility-Solar Development Alternative project would not be visible from any Officially Designated or Eligible State Scenic Highway.

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 Forestry Resources

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 or forest land to non-agricultural or non-forest uses. In addition, the Williamson Act Contract on the project site would not be required to be cancelled. As such, no impacts to agriculture or forestry resources would occur and the project-level and cumulative significant and unavoidable impacts related to the cancellation of an open space contract would be eliminated. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to agriculture and forestry resources compared to the project as this alternative would not require ground disturbance.

Air Quality

Under this alternative, no construction activities associated with ground disturbance would occur. 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

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 or have a substantial adverse effect on any riparian habitat. As such, Mitigation Measures MM 4.4-1 through MM 4.4-22 would not be required. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would not contribute to a cumulative loss of the California Glossy Snake, San Joaquin Coachwhip, Blunt-nosed Leopard Lizard, Least Bell's Vireo, Tricolored Blackbird, Swainson's Hawk, White-tailed Kite, Burrowing Owl, Loggerhead Shrike, Northern Harrier, LeConte's Thrasher, Tipton Kangaroo Rat and Short-nosed Kangaroo Rat, San Joaquin Kit Fox, San Joaquin Antelope Squirrel, American Badger, Tulare Grasshopper Mouse, and other nesting birds. 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 project as this alternative would not require ground disturbance.

Cultural Resources

Under this alternative, 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 45-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 less impacts related to cultural resources compared to the project as this alternative would not require ground disturbance.

Energy

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. As such, construction would be limited to trucks transporting the solar panels and installation of the solar panels on the rooftops of existing buildings. 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 operation would be limited to occasional vehicular visits for maintenance, as with the project, the No Ground-Mounted Utility-Solar Development Alternative would result in similar impacts related to energy resources compared to the project.

Geology and Soils

Given that only developed areas would be modified, the No Ground-Mounted Utility-Solar Development Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic- related ground failure, and landslides; result in substantial soil erosion or loss of topsoil; result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse; be located on expansive soil; soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. The No Ground-Mounted Utility-Solar Development Alternative would not require implementation of Mitigation Measures MM 4.7-1 through MM 4.7-8. 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 project as this alternative would not require ground disturbance.

Greenhouse Gas Emissions

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. 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 project. Therefore, the No Ground-Mounted Utility-Solar Development 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

The installation of rooftop solar equipment on existing structures would involve fewer hazardous materials (such as chemicals and fuels) than the project construction on the undeveloped project site. Similar to the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measures MM 4.9-1 through MM 4.9-3, which would require preparation of a Hazardous Materials Business Plan; regulate the use of herbicides; as well as require that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes, respectfully. Implementation of these mitigation measures would reduce impacts related to the public or environment through the routine transport, use, or disposal of hazardous materials and through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Under the No Ground-Mounted Utility-Solar Development Alternative, while it is unknown where the location of the small to medium solar PV systems would be installed, with implementation of the mitigation measures above and with compliance of all regulatory requirements, this alternative would not have an impact to any schools within 0.25 miles of the installation sites, creating a significant hazard to the public

or environment, and or result in a safety hazard or excessive noise for people residing or working in the project area within the Kern County Airport Land Use Plan, the No Ground-Mounted Utility-Solar Development Alternative would have less than significant impacts, similar to the project.

Similar to the project, the No Ground-Mounted Utility-Solar Development Alternative is not anticipated to physically interfere with emergency vehicle access or personnel evacuation from the site during construction or operation of this alternative. In addition, as the No Ground-Mounted Utility-Solar Development Alternative would not cause ground disturbance to land located on a listed hazardous materials site, Mitigation Measure MM 4.9-4 would not be required to be implemented.

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 valley region of Kern County, 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 battery storage component. However, due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As such, similar to the project, Mitigation Measure MM 4.14-1 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 compared to the project as this alternative would require usage of fewer hazardous materials.

Hydrology and Water Quality

No ground disturbance related to construction would be required under this alternative. Compliance with the NPDES Construction General Permit, including development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), would not be required under the No Ground-Mounted Utility-Solar Development Alternative, thus eliminating implementation of Mitigation Measures MM 4.7-4 and MM 4.10-1. Similar to the project, this alternative would require implementation of Mitigation Measure MM 4.9-2, which would require the provision of a Hazardous Materials Business Plan. Implementation of this mitigation measure would reduce potential impacts related to violating water quality standards or waste discharge requirements; creating or contributing runoff water that would exceed the capacity of existing for planned storm water drainage systems; and placing the project within a 100-year flood hazard area.

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 valley region of Kern County, drainage patterns and flow paths would not be altered. As such, impacts related to drainage patterns would be less than significant.

As it relates to groundwater supplies, water requirements under the No Ground-Mounted Utility-Solar Development Alternative, would be reduced as compared to the water requirements of the project as limited 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 (rather than directly on sediment). As such, this alternative would not substantially deplete groundwater levels in comparison to existing conditions. In addition, as solar panels would be installed on rooftops of existing commercial and industrial facilities, no change in pervious surfaces would occur. As such, impacts would be less than significant. Furthermore, this alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan as ground disturbance would not occur and no water from ground water would be required to be drawn under this alternative.

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.

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 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 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. Under this alternative, there would be no GPAs or CUPs 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 would be less than significant. Impacts to land use and planning under the No Ground-Mounted Utility-Solar Development Alternative would be greater compared to the project.

Mineral Resources

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 project as no ground disturbance would occur.

Noise

Rooftops of existing commercial and industrial facilities would be located in developed areas, and as a result, noise related to construction activities under this alternative would likely impact sensitive receptors during construction. However, as with the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measure MM 4.13-1. The operational noise generated from these solar PV systems would be similar to that of the 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 the No Ground-Mounted Utility-Solar Development Alternative would have a less than significant construction vibration impact. 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 impacts and operational noise impacts would be less than significant and would result in less impacts related to noise compared to the project.

Public Services

Unlike the project, the No Ground-Mounted Utility-Solar Development Alternative would not introduce structures into a currently undeveloped area and is not expected to temporarily or permanently increase the concentration of persons in an area.

With regard to fire protection, it is expected that the areas where the solar PV systems would be installed in more urbanized areas. However, due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As such, similar to the project, Mitigation Measure MM 4.14-1 would be implemented to reduce wildfire risks under this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to law enforcement 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 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 project as the proposed small to medium solar PV systems would be developed in urbanized areas that already receive fire protection and law enforcement protection services.

Transportation

Similar to the 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 project given the location of the existing facilities, thereby reducing impacts on the roadways surrounding the project site. As such, roadway segments within the valley region of Kern County 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 project. However, as with construction, these maintenance trips would be more dispersed than the project given the location of the existing facilities. Similar to the project, the number of added vehicles to the roadway network would not have a discernable effect on roadway operations or levels of service.

Similar to the project, construction-related traffic would be temporary and operations traffic would be nominal, and would be categorized under Section 15064.3(b)(3), qualitative analysis. 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 project.

As it relates to increasing hazards due to a geometric design feature or incompatible use, similar to the project, the No Ground-Mounted Utility-Solar Development Alternative would also require the use of oversized vehicles during construction which could create a hazard to the public by limiting motorist views and by the obstruction of space. As with the project, this alternative would also implement Mitigation

Measure MM 4.15-1, which would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during AM and PM peak hours.

With regard to emergency access, as this alternative would not cause a significant increase in congestion or significance worsen the existing service levels at intersection roadways, the No Ground-Mounted Utility-Solar Development Alternative would have a less-than significant impact on emergency access during construction and operation. As with the project, the No Ground-Mounted Utility-Solar Development Alternative would also implement Mitigation Measure MM 4.15-1, which would provide further assurances for emergency access.

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 compared to the project due to the dispersed nature of the construction and operational trips.

Tribal Cultural Resources

It is unlikely that the proposed rooftop solar systems under Alternative 4 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, the No Ground-Mounted Utility-Solar Development Alternative would result in similar impacts related to tribal cultural resources compared to the project.

Utilities and Service Systems

With regard to water demand, the No Ground-Mounted Utility-Solar Development Alternative would likely require minimal water as no dust suppression or concrete mixing would be required during construction. This alternative would also require minimal generation of wastewater and usage of electrical power, natural gas, 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 project, given the location of panels on top of buildings throughout the valley region of Kern County (rather than directly on sediment). 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 Measure MM 4.10-1, which requires implementation of a SWPPP, would not be required. Wastewater and solid waste generation associated with this alternative would be similar to the project due to the similar number of employees required for maintenance of the solar panels.

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 project due to the reduction in construction activities.

Wildfires

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 project. As such, similar to the project, the No Ground-Mounted Utility-Solar Development 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. With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the 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. Development of the No Ground-Mounted Utility-Solar Development Alternative would not require grading and excavation to reduce the overall slope of the project site. As such, 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 project as solar panels would be located in more urbanized areas.

With regard to cumulative wildfire impacts, the No Ground-Mounted Utility-Solar Development 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 risk. Based on the above, impacts associated with wildfire would be less than significant with mitigation. This alternative would result in less overall impacts related to wildfire than the project.

Comparison of Impacts

The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, public services, transportation, 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), and biological resources (cumulative only) that would occur under the project. The No Ground-Mounted Utility-Solar Development Alternative would result in similar impacts to energy. However, this alternative would result in greater impacts to GHG emissions given its reduced solar energy output.

Relationship to Project Objectives

This alternative would not achieve some of the project objectives including establishing a large-scale solar PV and battery energy storage facility in a manner that maximizes the production of reliable electricity in

an economically feasible manner. Additionally, there are some drawbacks to this alternative that include, but not limited to those listed below.

- The system would not likely be built out within a timeframe that would be similar to that of the 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 300 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 up to 300 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. 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 2,448 acres of total rooftop area) may be required to attain project's capacity of 300 MW of solar PV generating capacity. Because of space or capital cost constraints, many rooftop solar PV 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 PV generation. Given the size of the 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, 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 following:

> *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 (project and cumulative), agriculture and forestry resources (project and cumulative), and biological resources (cumulative only) that would occur under the project. 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. This alternative would also result in greater impacts to land use as it

would require extensive discretionary actions, such as design review, CUPs, or zone variances, depending on local jurisdictional requirements and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, this alternative would result in less impact to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, public services, transportation, 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 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 project because the project proponent lacks control and access to the sites required to develop 300 MW of distributed solar generated electricity. 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 General Plan/Specific Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

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

Edwards Air Force Base

Environmental Protection Agency

U.S. Air Force

U.S. Army

U.S. Army Corps of Engineers

U.S. Bureau of Land Management

U.S. Department of Agriculture, Natural Resource Conservation Service

U.S. Fish and Wildlife Service

U.S. Marine Corps

U.S. Navy

8.2 State of California

California Air Resources Board California

California Department of Conservation

California Department of Conservation, Geologic Energy Management Division

California Department of Conservation, Office of Land Conservation

California Department of Parks and Recreation

California Department of Toxic Substance Control

California Department of Water Resources

California Energy Commission

California Environmental Protection Agency

California Fish and Wildlife

California Highway Patrol

California Public Utilities Commission

California Regional Water Quality

California State Clearinghouse

Caltrans Division 6

Caltrans Division of Structures

8.3 Regional and Local

Animal Control Commission

Arvin-Edison Water Storage District

AT&T California

Bakersfield City Planning Department

Bakersfield City Public Works Department

Bidart Bros Inc.

Boston Ranch Company

C & A Farms, LLC

California City Planning Department

California Resources Petroleum Corporation

California State University Bakersfield

Center of Race, Poverty, and the Environment

China Lake Naval Weapons Center

City of Arvin

City of Maricopa

City of McFarland

City of Ridgecrest

City of Shafter

City of Taft

City of Tehachapi

City of Wasco

Congentrix Sunshine, LLC

Crop Production Services Inc.

Defenders of Wildlife

Delano City Planning Department

Diamond Farming Company

EDP Renewables Company

Fotowatio Renewable Ventures

General Shafter School District

Golden Express Trucking USA Inc.

Grapevine Energy, LLC

Inyo County Planning Department

Joseph Vineyards Estates, LLC

K&B Investments Fund

Kern Audubon Society

Kern Council of Governments

Kern County

Kern County Library

Kern County Parks & Recreation

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

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

Kern County Public Works Department - Building & Development/Survey

Kern County Public Works Department -Building & Development/Floodplain

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

Kern County Sheriff's Department

Kern County Superintendent of Schools

Kern County Water Agency

Kern County, Administrative Officer

Kern County, Agriculture Department

Kern County, Environmental Health Services Department

Kern County, Fire Department

Kern Mosquito Abatement District

Kern River Groundwater Sustainability Agency

Kings County Planning Agency

Lakeside Union School District

Local Agency Formation Commissions

Los Angeles Audubon

Los Angeles County Regional Planning Department

Lozeau Drury, LLP

Maricopa Unified School District

Metro Water District of Southern California

MFC Kern, LLC

Morgan Rose Ranch, LLC

Nahabedian Exploration Group, LLC

New Sunny International, LLC

P&N, LP

Pacific Gas & Electric Company

Panama-Buena Vista School District

Recurrent Energy

Renewal Resources Group Holding Company

Rosedale-Rio Bravo Water District

San Bernardino County Planning Department

San Joaquin Valley Air Pollution Control District

San Luis Obispo County Planning Department

Santa Barbara County Resources Management Department

Sierra Club, Kern Kaweah Chapter

Southern California Gas Company

Steven M. Goddard Company Inc.

Structure Cast

TBS Properties, LLC

Terra-Gen Power, LLC

Tulare County Planning and Development Department

Ventura County Resource Management Agency Planning Division

Vestas

Wasco Union High School

West Coast Grape Farms

WF Ranch, LP

Wheeler Ridge Maricopa Water Storage District

Willow Avenue Investment, LLC

Wind Stream, LLC

8.4 Individuals

Adams, Broadwell, Joseph & Cardozo

Barbara Grimm Trust

Bill Barnes

Carol Lawhon

Darren Kelly

David Laughing Horse Robinson

David Walsh

Echeverria Family Trust

Eric Anderson

George Kunz

James D. Kunkel

Joo Family Trust

Joyce LoBasso

Kate Kelly

Lori Anderson

Marry Ann Lockhart

Matthew Gorman

Michael Strickler

Ripley Jr. Trust

Robert Burgett

Sarah K. Friedman

Wayne Mayes

William Stone

8.5 Other

Chumash Council of Bakersfield

Kern County Valley Indian Council

Kitanemuk & Yowlumne Tejon Indians

LIUNA

Mojave Town Council

Native American Heritage Council of Kern County

San Fernando Band of Mission Indians

Santa Rosa Rancheria

Tejon Indian Tribe

Tubatulabal of Kern County

Tule River 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
Ronelle Candia – Supervising Planner
Johnathan Jensen – Planner 2

9.2 Technical Assistance

Dudek

Jennifer Sucha – Senior Planner
Vanessa Currie – Environmental Planner
Brian Grattidge – Senior Planner/Project Manager
Jonathan Leech – Practice Director – Environmental Technical Group
Joshua Saunders – Senior Planner/Visual Resources Specialist
Nicholas Lorenzen – Air Quality Specialist
Adam Poll – Senior Air Quality Specialist
Eric Schniewind – Environmental Geologist
Keith Babcock – Principal/Senior Biologist
Adam Giacinto – Senior Archaeologist
William Burns – Archaeologist
Audrey Herschberger – Environmental Engineer
Kayvan Ilkhanipour – Senior Hydrogeologist
Lisa Valdez – Senior Transportation Planner
Allie Sennett – Biologist
Michael Williams – Paleontologist
Christian Hunter – Hydrologist
Iulia Roman – Environmental Planner
Alessandra Zambrano – Urban Forestry Specialist
Daniel Hoffman – Environmental Planner
Kaylan Lamb – Environmental Planner
Lilli Martin – Environmental Planner
Savannah Rigney – Environmental Planner

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Chapter 10
Bibliography

Introduction

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

Kern Council of Governments. 2018. *2018 Regional Transportation Plan and Sustainable Communities Strategy*. August 2018. https://www.kerncog.org/wp-content/uploads/2018/10/2018_RTP.pdf.

Project Description

Conservation Biology Institute. 2020. "Mineral Resource Zones for Kern County." Data Basin [GIS map viewer]. Accessed November 2020. https://databasin.org/maps/new#datasets=26c92d3ecbe541ec81451f9de4e1e0e4.

County of Kern. 2009. *Kern County General Plan – Chapter 1: Land Use, Open Space, and Conservation Element.* September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp1LandUse.pdf.

County of Kern. 2021. Kern County GIS [interactive GIS map viewer]. Accessed April 13, 2021. https://maps.kerncounty.com/H5/index.html?viewer=KCPublic.

DOC (California Department of Conservation). 2020. "Important Farmland Mapping Categories and Soil Taxonomy Terms." Accessed November 2020. https://www.conservation.ca.gov/dlrp/fmmp/Documents/soil_criteria.pdf.

KCFD (Kern County Fire Department). 2020. "About Us." Accessed November 2020. https://www.kerncountyfire.org/en/about-us.html.

KCSO (Kern County Sheriff's Office). 2017. "Kern County Sheriff's Office – Policies and Procedures." Updated August 2017. Accessed November 2020. https://www.kernsheriff.org/Policies_Document/Department/DepartmentPolicies_SectionA.pdf.

Aesthetics

BLM (Bureau of Land Management). 1986. *H-8410-1 – Visual Resource Inventory*. Department of the Interior Bureau of Land Management Washington, D.C. January 17, 1986. https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_H-8410.pdf.

Caltrans (California Department of Transportation). 2021. California Scenic Highway Mapping Systems; GIS online viewer. Accessed May 5, 2021. https://www.arcgis.com/apps/webappviewer/index.html?id=2e921695c43643b1aaf7000dfcc19983.

County of Kern. 2004. *Revised Update of the Kern County General Plan Recirculated Draft Program Environmental Impact Report*. SCH# 2002071027. Kern County Planning Department. January 2004. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_RPEIR_vol1.pdf.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

FHWA (Federal Highway Administration). 2019a. "About America's Byways." Accessed May 2021. https://www.fhwa.dot.gov/byways/about.

FHWA. 2019b. "Find Byways." Accessed May 2021. https://www.fhwa.dot.gov/byways/states/CA/maps.

Palmer, Caroline, and Chad Laurent. 2014. "Solar and Glare." Meister Consultants Group. June 2014.

USFS (U.S. Forest Service). 1995. *Landscape Aesthetics: A Handbook for Scenery Management*. United States Department of Agriculture Forest Service, Agriculture Handbook Number 701. December 1995. https://www.nrc.gov/docs/ML1224/ML12241A377.pdf.

Agricultural and Forestry Resources

DOC (California Department of Conservation). 2017. Farmland Mapping and Monitoring Program, 2017 map. Accessed May 2021. https://databasin.org/datasets/59ff8ef56b47424d8fd0af3b9cddc09a.

DOC. 2019a. "Williamson Act Program Overview." Accessed May 2021. https://www.conservation.ca.gov/dlrp/wa/Pages/wa_overview.aspx.

DOC. 2019b. Contract Cancellations. Accessed May 2021. https://www.conservation.ca.gov/dlrp/wa/Pages/removing_contracts_cancellations.aspx.

DOC. 2020. "Important Farmland Mapping Categories and Soil Taxonomy Terms." Accessed May 2021. https://www.conservation.ca.gov/dlrp/fmmp/Documents/soil_criteria.pdf.

DOF (Department of Finance). 2021. "E-5 Population and Housing Esitmated for Cities, Counties, and the State, 2011–2021 with 2010 Census Benchmark." May 2021. Accessed June 6, 2021. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

Kern County Economic Development Corporation. 2021. *2021 Kern County Market Overview and Member Directory.*

Quad Knopf Consultants. 2021. *Agricultural Conversion and Forest Resources Study, Kern County, Sandrini Solar Project.* April 2021.

Air Quality

CAPCOA (California Air Pollution Control Officers Association). 2016. "What is Nitrogen Oxide?" Accessed May 2021. http://www.capcoa.org/health-effects/#What_is_Nitrogen_Oxide.

CARB (California Air Resources Board). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October 2000. Accessed May 2021. http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf.

CARB and American Lung Association of California. 2007. *Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution*. November 2007.

CDC (Center for Disease Control and Prevention). 2020a. "Symptoms of Coronavir*us*." Accessed May 2021. https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html.

CDC. 2020b. "How COVID-19 Spreads." Accessed May 2021. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html.

Fierro, Maria A. et al. 2001. *Adverse Health Effects of Exposure to Ambient Carbon Monoxide*. September 2001.

Harvard. 2020. *Exposure to Air Pollution and COVID-19 Mortality in the United States: A Nationwide Cross-Sectional Study (Updated April 24, 2020)*. Accessed May 2021. https://projects.iq.harvard.edu/covid-pm.

Holshue et al. 2020. "First Case of 2019 Novel Coronavirus in the United States." March 5, 2020. Accessed May 2021. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7092802/.

Kern COG (Council of Governments). 2016. *Conformity Determination for the Kern Council of Governments (KCOG) 2017 Federal Transportation Improvement Program (FTIP) and 2014 Regional Transportation Plan (RTP) Amendment #1*, December 16. Accessed May 2021. https://www.kerncog.org/wp-content/uploads/2009/10/conformity_2017_FTIP_RTP_a1.pdf.

OEHHA – ALA (Office of Environmental Health Hazards Assessment and American Lung Association). 2001. *Health Effects of Diesel Exhaust*. May 21. Accessed May 2021. https://oehha.ca.gov/air/health-effects-diesel-exhaust.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2015. *Guidance for Assessing and Mitigating Air Quality Impacts*. March 2015.

SJVAPCD. 2018. Rule 9510; Indirect Source Review. December. https://www.valleyair.org/rules/currntrules/r9510-a.pdf.

SJVAPCD. 2020. *Ambient Air Quality Standards & Valley Attainment Status*. http://www.valleyair.org/aqinfo/attainment.htm.

USEPA (U.S. Environmental Protection Agency). 2012. *Integrated Science Assessment for Lead (Third External Review Draft)*, November 2012. Available at: http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=242655#Download. Accessed May 2021.

Valley Fever Center for Excellence. 2019a. "Order the Right Tests." Accessed May 2021. https://vfce.arizona.edu/valley-fever-people/order-right-tests.

Valley Fever Center for Excellence. 2019b. "Check for Complications." Accessed May 2021. https://vfce.arizona.edu/valley-fever-people/check-complications.

Weather Underground. 2021. "Bakersfield, CA; Weather History for Meadows Field – January 2016 to December 2016." Accessed May 5, 2021. https://www.wunderground.com/history/monthly/KBFL/date/2019-6?req_city=Bakersfield&req_statename=California.

WRCC (Western Regional Climate Center). 2021. "Kern River PH1, California (04520)." Accessed May 5, 2021. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4520.

Biological Resources

DOE (U.S. Department of Energy). 2015. *A Review of Avian Monitoring and Mitigation Information at Existing Utility- Scale Solar Facilities*. April 2015. Accessed September 9, 2021. https://www.energy.gov/sites/prod/files/2019/03/f61/NREL%202015.pdf.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation, 2nd Ed*. California Native Plant Society, Sacramento.

Cultural Resources

ASM Affiliates Inc. 2015. *Cultural Resources Technical Report: Kern County Oil and Gas Study*. On file, SSJVIC, CSUB.

Boyd, W.H. 1997. *Lower Kern River Country 1850–1950: Wilderness to Empire*. Kings River Press, Lemoore.

Cook, S.F. 1978. "Historical Demography." In *Handbook of North American Indians*, Volume 8, California, R. F. Heizer, editor, pp. 91–98. Washington, D.C., Smithsonian Institute.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

Kroeber, A.L. 1925. *Handbook of the Indians of California*. Bureau of American Ethnology, Bulletin 78. Washington, D.C.

Latta, F.F. 1977. *Handbook of the Yokuts Indians*. Bear State Books, Santa Cruz.

Morgan, W.A. 1914. *History of Kern County, California with Biographical Sketches*. Los Angeles: Historic Record Company.

O'Neill, P. 2018. *Spirit-Fishing in the Land of the Dead: Charmstones in Prehistoric California.* Paper presented at the American Anthropological Association meetings.

Pacific Legacy. 2006. *Southern San Joaquin Valley Oil Fields Comprehensive Study*. Manuscript on file, BLM Bakersfield office.

Sharp, J. 2000. "Charmstones: A Summary of the Ethnographic Record." Proceedings of the Society for California Archaeology 13:233–243. https://www.scahome.org/publications/proceedings/Proceedings.13Sharp.pdf.

Sutton, M.Q. 1996. "A Charmstone Cache from the Southern San Joaquin Valley." *Pacific Coast Archaeological Society Quarterly*, 32(4), pp.41–54.

Van Bueren, T., and R. Wiberg. 2011. "Putting Central California Charmstones in Context." *California Archaeology* 3:199–248.

Energy

CARB (California Air Resources Board). 2011. "Facts About the Advanced Clean Cars Program." November 9, 2011. Accessed June 2021. http://www.arb.ca.gov/msprog/zevprog/factsheets/advanced_clean_cars_eng.pdf.

CARB. 2014. "Truck and Bus Regulation, On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation." August 29, 2014. Accessed June 2021. http://www.arb.ca.gov/msprog/onrdiesel/documents/FSRegSum.pdf.

CARB. 2017. *Clean Car Standards—Pavley, Assembly Bill 1493*. Accessed May 2021. http://www.arb.ca.gov/cc/ccms/ccms.htm.

CARB. 2021. EMFAC 2021 Web Database (v1.0.0). Accessed June 2021. https://www.arb.ca.gov/emfac/.

CEC (California Energy Commission). 2018a. California Energy Demand 2018–2030 Preliminary Forecast. CEC-200-2018-002-CMF. February 2018. Accessed June 2021. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2017-integrated-energy-policy-report/2017-iepr.

CEC. 2020a. "Electricity Consumption by Entity." Accessed June 2021. http://ecdms.energy.ca.gov/elecbycounty.aspx.

CEC. 2020b. "Gas Consumption by Entity." Accessed June 2021. http://ecdms.energy.ca.gov/gasbycounty.aspx.

CEC. 2020c. "Gas Consumption by Planning Area." Accessed June 2021. http://ecdms.energy.ca.gov/gasbyplan.aspx.

CPUC (California Public Utilities Commission). 2020. "Natural Gas and California." Accessed June 2021. http://www.cpuc.ca.gov/natural_gas/.

EIA (U.S. Energy Information Administration). 2020a. "State Electricity Profiles – California Electricity Profile 2018." December 31, 2019; corrected March 23, 2020. Accessed June 2021. https://www.eia.gov/electricity/state/california/index.php.

EIA. 2020b. "California State Energy Profile." Last updated January 16, 2020. Accessed June 2021. https://www.eia.gov/state/print.php?sid=CA.

EIA. 2020c. "Natural Gas Consumption by End Use." May 2020. Accessed June 2021. https://www.eia.gov/dnav/ng/ng_cons_sum_a_EPG0_VC0_mmcf_a.htm.

EIA. 2020d. "California State Profile and Energy Estimates – Table F16: Total Petroleum Consumption Estimates, 2017." Accessed June 2021. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US&sid=CA.

EPA and NHTSA (U.S. Environmental Protection Agency and National Highway Traffic Safety Administration). 2012. "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards." EPA–HQ–OAR–2010–0799, NHTSA-2010-0131.

Insight Environmental/Trinity Consultants. 2021. *Air Quality Impact Analysis, Sandrini Solar Project*. May.

Kern County. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf.

PG&E (Pacific Gas & Electric Company). 2020. "Company Profile." Accessed June 2021. https://www.pge.com/en_US/about-pge/company-information/profile/profile.page.

The Climate Registry. 2021. "2021 Default Emission Factors." May. Accessed June 2021. https://www.theclimateregistry.org/wp-content/uploads/2021/05/2021-Default-Emission-Factor-Document.pdf.

Geology and Soils

Bartow, J.A. 1991. *The Cenozoic Evolution of the San Joaquin Valley, California*. USGS Professional Paper 1501.

Borchers, J.W., and M. Carpenter. 2014. *Land Subsidence from Groundwater Use in California*. California Water Foundation Summary Report. April 2014.

Bryant, William A., and Earl W. Hart. 2007. Special Publication 42: Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps, Interim Revision 2007. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf.

CDM (California Division of Mines). 1952. Arvin-Tehachapi Earthquake. Mineral Information Service Vol. 5, No. 9, September 1, 1952.

CDMG (California Department of Conservation, Division of Mines and Geology). 1984. *Fault Evaluation Report FER-150, Wheeler Ridge and Pleito Fault System*. March 21, 1984.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

DWR (California Department of Water Resources). 2018a. Groundwater Level Data. http://wdl.water.ca.gov/gw/.

DWR. 2018b. Groundwater Information Center. http://gis.water.ca.gov/app/groundwater/.

Farr, Tom G., Cathleen E. Jones, and Zhen Liu. 2017. *Progress Report: Subsidence in California, March 2015–September 2016.*

FEMA (Federal Emergency Management Agency). 2018. FEMA Flood Hazard Layer, 06029C-NFHL. August 3, 2018.

USDA (United States Department of Agriculture). 2020. Natural Resources Conservation Service, Soil Survey Geographic (SSURGO) database for Kern County, California, Southeastern Part, California. http://SoilDataMart.nrcs.usda.gov/.

USGS (U.S. Geological Survey and California Geological Survey). 2010. Quaternary Fault and Fold Database for the United States. "2010 Fault Activity Map of California." https://earthquake.usgs.gov/hazards/qfaults/ and http://maps.conservation.ca.gov/cgs/fam/.

Greenhouse Gas Emissions

CARB (California Air Resources Board). 2010. Proposed SB 375 Greenhouse Gas Targets: Documentation of the Resulting Emission Reductions based on MPO Data, August 9, 2010. https://ww3.arb.ca.gov/cc/sb375/mpo.co2.reduction.calc.pdf.

CARB. 2014. *First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006*. May 2014. Accessed March 27, 2021. http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

EPA (U.S. Environmental Protection Agency). 2017. "Climate Change." Last updated January 19, 2017. Accessed April 27, 2021. https://www.epa.gov/climatechange.

EPA. 2019. Outdoor Air Quality Data: Monitor Values Report. Accessed March 2021. https://www.epa.gov/outdoor-air-quality-data/monitor-values-report.

EPA and NHTSA (National Highway Traffic Safety Administration). 2016. Federal Register / Vol. 81, No. 206 / Tuesday, October 25, 2016 / Rules and Regulations. Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium-and Heavy-Duty Engines and Vehicles-Phase 2. Accessed in March 2021. https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf.

IPCC (Intergovernmental Panel on Climate Change). 2014. *Climate Change 2014 Synthesis Report*. https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf.

Kern County Planning Department. 2006. *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*. December 1, 2006. http://www.kernair.org/Documents/CEQA/AirQualityAssessmentPreparationGuidelines.pdf.

NHTSA (National Highway Traffic Safety Administration). 2019. *Corporate Average Fuel Economy Standards*. https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy.

NHTSA. 2020. SAFE: The Safer Affordable Fuel-Efficient "SAFE" Vehicles Rule. March 31, 2020. https://www.nhtsa.gov/corporate-average-fuel-economy/safe.

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2012. Kern County Communitywide Greenhouse Gas Emission Inventory 2005 Baseline Year – 2020 Forecast. May 2012. https://www.kerncog.org/wp-content/uploads/2011/09/kc_ghg_final_report_052012.pdf.

SJVAPCD. 2015. *Guidance for Assessing the Mitigation Air Quality Impacts*. February 19, 2015. https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF.

Hazards and Hazardous Materials

CAL FIRE (California Department of Forestry and Fire Protection). 2007. Fire Hazard Severity Zones in SRA. Adopted November 7, 2007. Accessed March 27, 2021. https://osfm.fire.ca.gov/media/6687/fhszs_map15.pdf.

Federal Motor Carrier Safety Administration, 2019. National Hazardous Materials Route Registry – By State. Updated February 19, 2019. https://www.fmcsa.dot.gov/regulations/hazardous-materials/national-hazardous-materials-route-registry-state.

Fthenakis, Vasilis M. 2003. *Life Cycle Impact Analysis of Cadmium in CdTe PV Production*. December 1, 2003.

KCFD (Kern County Fire Department). 2019. Standard No. 503-507, Solar Panels (Ground-Mounted, Commercial & Residential), Fire Protection Requirements. Accessed March 27, 2021. https://kerncountyfire.org/images/stories/fire_prevention/Permit%20Requirements/SolarPanels.pdf.

KCFD. 2020. "About Us." Accessed March 27, 2021. https://www.kerncountyfire.org/en/about-us.html.

Kern County. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf.

KTA Associates. 2019a. *Phase I Environmental Site Assessment for Sandrini Sol Solar Site located in Central Californ*ia. February 16, 2019.

KTA Associates. 2019b. *Phase I Environmental Site Assessment for Sandrini Sol Solar Site located in Central California.* September 12, 2019.

KTA Associates. 2020. *Phase I Environmental Site Assessment for Sandrini Sol Solar Site located in Central California*. October 7, 2020.

Sinha, Parikhit, and Mariska de Wild-Scholten. 2012. *Life Cycle Assessment of Utility-Scale CDTE PV Balance of Systems*.

Hydrology and Water Quality

County of Kern. 2008. *Willow Springs Specific Plan*. Adopted April 1, 2008. https://psbweb.co.kern.ca.us/planning/pdfs/SPs/WillowSprings_SP.pdf.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

CVRWQCB (Central Valley Regional Water Quality Control Board). 2018. *Central Valley Region, Water Quality Control Plan (Basin Plan) for the Tulare Lake Basin*. Revised May 2018. https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp_201805.pdf.

DWR (Department of Water Resources). 2006. *San Joaquin Valley Groundwater Basin Kern County Subbasin California Groundwater Bulletin 118*. January 20, 2006. Accessed October 22, 2020. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/5_022_14_KernCountySubbasin.pdf.

Groundwater Exchange. 2020. "San Joaquin Valley – Kern County." Accessed October 22, 2020. https://groundwaterexchange.org/basin/san-joaquin-valley-kern-5-022-14/.

Kern Groundwater Authority. 2020. *Groundwater Sustainability Plan Kern County, California*. January 2020. http://www.kerngwa.com/assets/kga-umbrella-gsp_final.pdf.

Provost & Pritchard Consulting Group. 2020. *Tulare Lake Basin Portion of Kern County Integrated Regional Water Management Plan*. March 11.

USDA (United States Department of Agriculture, Natural Resources Conservation Service). 2021. Soil Survey Geographic (SSURGO) database for Kern County, California, Southeastern Part, California. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

Wheeler Ridge-Maricopa Water Storage District. 2020. "Wheeler Ridge-Maricopa Water Storage District – Our Story." Accessed October 19, 2020. https://wrmwsd.com/.

Land Use

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://kernplanning.com/planning/ planning-documents/general-plans elements/.

Kern COG (Council of Governments). 2018. *2018 Regional Transportation Plan/Sustainable Communities Strategy*. August 16, 2018. Accessed in May 2021. https://www.kerncog.org/wp-content/uploads/2018/10/2018_RTP.pdf.

Mineral Resources

CalGEM (California Geologic Energy Management Division). 2021a. *Well Finder CalGEM GIS.* https://maps.conservation.ca.gov/doggr/wellfinder/#openModal.

CalGEM. 2021b. *Well Maintenance and Cleanout History*. https://www.conservation.ca.gov/calgem/Pages/Well-Maintenance.aspx.

CGS (California Geologic Survey). 1999a. *Mineral Land Classification of Southeastern Kern County, California*, Plate 11.

CGS. 1999b. *Generalized geology of Southeastern Kern County, California, Map*.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

County of Kern. 2021. Personal communication between Lorelei Oviatt (County of Kern) and Jennifer Sucha (Dudek). August 12, 2021.

DOC (California Department of Conservation). 2021. *Guidelines for Classification and Designation of Mineral Lands*. https://www.conservation.ca.gov/smgb/Guidelines/Documents/ClassDesig.pdf.

USGS (United States Geologic Survey). 2021. "Active Mines and Mineral Plants in the United States." https://mrdata.usgs.gov/mineplant/map-us.html.

The Bakersfield Californian. 2019. "Family offers to buy out struggling gold mine near Mojave." https://www.bakersfield.com/news/family-offers-to-buy-out-struggling-gold-mine-near-mojave/article_e7f1d962-2a39-11e9-8992-77ab19f7c6f0.html.

Noise

Caltrans (California Department of Transportation). 2020. *Transportation and Construction Vibration Guidance Manual*. April 2020.

FTA (Federal Transit Administration). 2006. *Transit Noise and Vibration Impact Assessment*. U.S. Department of Transportation Office of Planning and Environment. Washington, D.C. May 2006. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf.

Public Services

Arvin High School District. 2021. "About Us." Accessed May 6, 2021. https://arvin.kernhigh.org/apps/pages/index.jsp?uREC_ID=600063&type=d&pREC_ID=1081396.

CAL FIRE (California Department of Forestry and Fire Protection). 2007. "Draft Fire Hazard Severity Zones in LRA" [map]. September 24, 2007. https://osfm.fire.ca.gov/media/6686/fhszl06_1_map15.pdf.

CAL FIRE. 2021. "About CAL FIRE." Accessed May 2021. http://calfire.ca.gov/about/about.

California State Board of Equalization. 2021. "Active Solar Energy System Exclusion." https://www.boe.ca.gov/proptaxes/active-solar-energy-system.htm.

CHP (California Highway Patrol). 2021a. "About Us." Accessed May 2021. https://www.chp.ca.gov/Home/About-Us.

CHP. 2021b. "Find an Office." Accessed May 2021. https://www.chp.ca.gov/find-an-office.

CHP. 2021c. "Central Division." Accessed May 2021. https://www.chp.ca.gov/Find-an-Office/Central-Division.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

County of Kern. 2010. *Parks and Recreation Master Plan.* County of Kern Parks and Recreation Department. May 2010. https://www.kerncounty.com/home/showpublisheddocument/2148/637127126894370000.

County of Kern. 2020. *Kern County Recommended Budget Fiscal Year 2020-21.* August 2020. https://www.kerncounty.com/home/showpublisheddocument?id=4797.

County of Kern. 2021. *Kern County Preliminary Recommended Budget Fiscal Year 2021–22*. June 2021. https://www.kerncounty.com/home/showpublisheddocument/6755/637600568511330000.

CPSM (Center for Public Safety and Land Management). 2017. *Operational and Administrative Analysis, Kern County, California, Final Report*, Table 6-1. Accessed May 2021. https://www.kget.com/wp-content/uploads/sites/2/2019/12/KCFD-CPSM.pdf.

KCFD (Kern County Fire Department). 2009. *Kern County Fire Department Wildland Fire Management Plan*. Accessed May 2021. https://dokumen.tips/documents/kern-county-fire-department-wildland-fire-management-plan-fire-management-plan.html.

KCFD. 2018. *Kern County Fire Department, United Strategic Fire Plan*. Last updated March 2018. https://www.dropbox.com/s/38ao2nvk24w6coy/Kern%20County%20Fire%20Department%20Unit%20Strategic%20Fire%20Plan.pdf?dl=0.

KCFD. 2020. *County of Kern Multi-Jurisdiction Hazard Mitigation Plan*. Approved by FEMA April 9, 2021. https://www.dropbox.com/s/qkzvw49poktpgb0/Kern-MJHMP-VOL-1.pdf?dl=0.

KCFD. 2021a. "About Us." Accessed May 6, 2021. http://www.kerncountyfire.org/about-us.html.

KCFD. 2021b. "Fire Stations." Accessed May 2021. http://www.kerncountyfire.org/operations/fire-stations.html#35.2963076/-118.6703035/8/cats/16/hotspot/52.

KCSO (Kern County Sheriff's Office). 2021a. "KCSO History." Accessed May 2021. https://www.kernsheriff.org/History.

KCSO. 2021b. "Contact Us." Accessed May 2021. https://www.kernsheriff.org/Contact.

KCSO. 2021c. "Lamont." Accessed May 2021. https://www.kernsheriff.org/Lamont.

Kern County Library. 2021. "About the Kern County Library." http://www.kerncountylibrary.org.

Kern County Superintendent of Schools. 2021. Kern County District and School List, spreadsheet. Accessed May 6, 2021. https://kern.org/schools-a-z/.

Superior Court of California. 2019. "Kern County Court Locations." Accessed August 2021. https://www.kern.courts.ca.gov/general/court_locations.

The Bakersfield Californian. 2021. "Kern supervisors fire shot at state tax incentive that discounts taxes for renewable energy properties." March 29, 2021. https://www.bakersfield.com/news/kern-supervisors-fire-shot-at-state-tax-incentive-that-discounts-taxes-for-renewable-energy-properties/article_ccf84176-90e6-11eb-a9c8-b35d7a92dd41.html.

USPS (United States Postal Service). 2021. Postmaster Finder, Post Offices by County. Accessed August 2021. https://webpmt.usps.gov/pmt007.cfm?PostOfficeCounty=Kern&stat_state_name=CALIFORNIA.

Transportation

Caltrans (California Department of Transportation). 2002. *Guide for the Preparation of Traffic Impact Studies*. Department of Transportation, State of California, Sacramento. December 2002.

Caltrans. 2020. P*roject Development Procedures Manual, Chapter 27, Access Control Modification*. June 30, 2020. https://dot.ca.gov/-/media/dot-media/programs/design/documents/pdpm-chapter27-a11y.pdf.

City of Bakersfield. 2021. "Bakersfield Municipal Airport." Accessed September 8, 2021. https://www.bakersfieldcity.us/565/Bakersfield-Municipal-Airport.

County of Kern. 2009. *Kern County General Plan*. September 22, 2009. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf.

County of Kern. 2011. *Kern County Rail Study.* February 2011. http://www.kerncog.org/wp-content/uploads/2010/03/Kern_County_Short_Line_Rail_Study_2011.pdf.

County of Kern. 2012. *Airport Land Use Compatibility Plan, County of Kern*. November 13, 2012. https://psbweb.co.kern.ca.us/planning/pdfs/ALUCP2012.pdf.

County of Kern. 2020. "Meadows Field Airport." Accessed September 8, 2021. https://meadowsfield.com/.

Kern Council of Governments. 2018. *2018 Regional Transportation Plan and Sustainable Communities Strategy.* August 2018. https://www.kerncog.org/wp-content/uploads/2018/10/2018_RTP.pdf.

Kern Transit. 2021. "Routes & Schedules." Accessed August 2021. https://kerntransit.org/routes-and-schedules/.

OPR (California Governor's Office of Planning and Research). 2016. *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*. January 20, 2016. http://opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf.

OPR. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

Skydive San Joaquin Valley. 2021. *Skydive San Joaquin Valley*. 2021. https://www.skydivesanjoaquinvalley.com/.

Tribal Cultural Resources

Governor's Office of Planning and Research. 2005. *Tribal Consultation Guidelines: Supplement to General Plan Guidelines*. November 14, 2005. http://nahc.ca.gov/wp-content/uploads/2019/04/SB-18-Tribal-Consultation-Guidelines.pdf.

Utilities and Service Systems

CalRecycle (California's Department of Resources Recycling and Recovery). 2011. "SWIS Facility/Site Activity Details, Taft Recycling & Sanitary Landfill (15-AA-0061)." Accessed April 13, 2021. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3895?siteID=709.

CalRecycle. 2019. "About CalRecycle, What We Do." Accessed December 30, 2019. https://www.calrecycle.ca.gov/aboutus/whatwedo.

CalRecycle. 2021a. "SWIS Facility Detail, Bakersfield Metropolitan (Bena) Sanitary Landfill (15-AA-0273)." Accessed May 3, 2021. https://www2.calrecycle.ca.gov/swfacilities/Directory/15-AA-0273/.

CalRecycle. 2021b. "SWIS Facility Detail, Lebec Sanitary Landfill (15-AA-0056)." Accessed May 3, 2021. https://www2.calrecycle.ca.gov/swfacilities/Directory/15-AA-0056/.

CalRecycle. 2021c. "About CalRecycle, What We Do." Accessed May 3, 2021. https://www.calrecycle.ca.gov/aboutus/whatwedo.

CalRecycle. 2021d. "SWIS Facility Detail, Taft Recycling & Sanitary Landfill (15-AA-0061)." Accessed May 3, 2021. https://www2.calrecycle.ca.gov/swfacilities/Directory/15-AA-0061/.

DWR (Department of Water Resources). 2006. *California's Groundwater Bulletin 118—San Joaquin Valley Groundwater Basin Kern County Subbasin*. Accessed June 22, 2021. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/5_022_14_KernCountySubbasin.pdf.

DWR. 2021. GSA Map Viewer. Accessed June 22, 2021. https://sgma.water.ca.gov/webgis/index.jsp?appid=gasmaster&rz=true.

Groundwater Exchange. 2021. "San Joaquin Valley – Kern County." Accessed June 22, 2021. https://groundwaterexchange.org/basin/san-joaquin-valley-kern-5-022-14/.

Kern Groundwater Authority. 2020. *Groundwater Sustainability Plan*. January 2020. Accessed June 22, 2021. http://www.kerngwa.com/assets/kga-umbrella-gsp_final.pdf.

SCE (Southern California Edison). 2021. Southern California Edison Power Site Search Tool. Accessed May 2021. https://www.arcgis.com/apps/webappviewer/index.html?id=05a84ec9d19f43ac93b451939c330888.

Wildfire

CAL FIRE (California Department of Forestry and Fire Protection). 2009. Post Fire Erosion (thr_erosclass09_1) (GIS Data). http://frap.fire.ca.gov/data/assessment2010/data/thr_erosclass09_1.gdb.zip.

CAL FIRE. 2021a. State Responsibility Area (SRA) Viewer. Accessed July 2021. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1.

CAL FIRE. 2021b. FHSZ Viewer. Accessed July 2021. https://egis.fire.ca.gov/FHSZ/.

CAL FIRE. 2021c. Fire Perimeters (fire20_1) (GIS Data). https://frap.fire.ca.gov/frap-projects/fire-perimeters/.

CPUC (California Public Utilities Commission). 2021. CPUC FireMap Viewer [GIS map viewer]. CPUC Fire Threat Maps and the High-Fire Threat District. Accessed July 2021. https://ia.cpuc.ca.gov/firemap/.

KCFD (Kern County Fire Department). 2009. *Kern County Fire Department Wildland Fire Management Plan*. Accessed May 3, 2021. http://mitigatehazards.com/county-of-kern/documents/.

KCFD. 2019. Standard No. 503-507, Solar Panels (Ground Mounted, Commercial & Residential), Fire Protection Requirements. Accessed May 3, 2021. https://kerncountyfire.org/images/stories/fire_prevention/Permit%20Requirements/SolarPanels.pdf.

KCFD. 2020. *Unit Strategic Fire Plan, Kern County Fire Department*. March 2020. Accessed May 3, 2021. https://osfm.fire.ca.gov/media/2ssfzgcb/2020-krn-fire-plan.pdf.

KCFD. 2021. "Department Profile." Accessed July 13, 2021. https://kerncountyfire.org/about-kcfd/.

Kern County. 2008. *Kern County Emergency Operations Plan.* https://inspections.kerncountyfire.org/images/stories/emergency_preparedness/Kern_Basic_043008.pdf.

Moench, R., and J. Fusaro. 2012. *Soil Erosion Control after Wildfire – 6.308*. Colorado State University Extension. https://mountainscholar.org/bitstream/handle/10217/183596/AEXT_063082012.pdf?sequence=1&isAllowed=y.

Weather Underground. 2021. "Bakersfield, CA; Weather History for Meadows Field – January 2016 to December 2016." Accessed May 5, 2021. https://www.wunderground.com/history/monthly/KBFL/date/2019-6?req_city=Bakersfield&req_statename=California.

WRCC (Western Regional Climate Center). 2021. "Kern River PH1, California (04520)." Accessed May 5, 2021. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4520.

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